



August 1999

Volume 67 No 8

Amateur Radio

Journal of the Wireless Institute of Australia



Full of the latest amateur radio news, information and technical articles, including...

- * ICOM IC-Q7A Review
- * Y2K: It's Elementary, My Dear Watson
- * VK5s go to Dayton Hamvention '99 - USA
- * ARDF Championships - Korea
- * WIA/ACA Meeting Report
- * An Attenuator Set for Receiver Sensitivity Measurements

Plus *lots of other articles, news and special interest columns.*

The Contest Calendar

Contest Calendar August - October 1999

Aug 1	YO DX Contest (CW/SSB)	
Aug 7	SARS Sprint Contest (CW)	(Jun 99)
Aug 7	Waitkere Sprint (CW)	(Jun 99)
Aug 7	European HF Championship (CW/SSB)	
Aug 14/15	Keymen's Club of Japan Contest (CW)	(Jul 99)
Aug 14/15	Remembrance Day Contest (CW/SSB)	(Jul 99)
Aug 14/15	Worked All Europe DX Contest (CW)	(Jul 99)
Aug 21/22	SEANET SSB Contest	(Jun 99)
Aug 28/29	SCC RTTY Championship	(Aug 99)
Aug 28/29	TOEC WW Grid Contest (CW)	
Sep 4/5	All Asia DX Contest (Phone)	(May 99)
Sep 4/5	Bulgarian DX Contest (CW)	(Aug 99)
Sep 5	Panama Anniversary Contest (SSB)	(Aug 99)
Sep 11/12	Worked All Europe DX Contest (Phone)	(Jul 99)
Sep 18/19	SAC DX CW	(Aug 99)
Sep 25	Internet CW Sprint Contest	
Sep 25/26	SAC DX Phone	(Aug 99)
Sep 25/26	CQ WW RTTY DX Contest	(Aug 99)
Oct 2/3	VK/ZL/Oceania DX Contest	(Aug 99)
Oct 3	RSGB 21/28 Mhz Contest (SSB)	(Aug 99)
Oct 9	Ten-Ten Int. Day Sprint (CW/SSB/RTTY)	(Sep 99)
Oct 9/10	VK/ZL/Oceania DX Contest	(Aug 99)
Oct 16/17	JARTS WW RTTY Contest	(Sep 99)
Oct 16/17	Worked All Germany Contest (CW/SSB)	
Oct 17	Asia-Pacific Sprint (CW)	(Jan 99)
Oct 17	RSGB 21/28 Mhz Contest (CW)	(Aug 99)
Oct 30/31	CQ WW DX Contest (SSB)	(Sep 99)

Main Australian Contests

Remembrance Day Contest (August)

Australia's biggest contest. States compete for RD Trophy. Highly recommended.

VK-ZL-Oceania DX Contest (October)

An opportunity for overseas stations to work Australia and New Zealand and vice versa. If 10 and 15 metres are your best bands, this one is worth a shot.

VHF/UHF Spring Field Day (November)

A chance to go portable on the VHF/UHF bands. Activity is on SSB and FM.

Ross Hull VHF/UHF Contest (December/ January)

THE contest for the serious VHF/UHF DXer and microwave enthusiast. Most activity is SSB rather than FM, so Novices will find contacts difficult.

VHF/UHF Summer Field Day (January)

Another opportunity to go portable on VHF/UHF. Activity is on SSB and FM.

John Moyle Field Day (March)

Portable operating on all bands. Great fun!

VK Novice Contest (June)

A HF-only contest originally intended for newcomers to amateur radio - not as popular as most other contests.



Amateur Radio

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Our cover this month

Cover photo demonstrates the miniature size of modern
Icom and Yaesu handheld transceivers.
Photo courtesy of Paul McMahon VK3DIP

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, How to write for Amateur Radio is available from the Federal Office on receipt of a stamped self-addressed envelope.

Back Issues

Back issues are available directly from the WIA Federal Office (until stocks are exhausted, at \$4.00 each (including postage within Australia)) to members.

Photostat copies

When back issues are no longer available, photocopies of articles are available to members at \$2.50 each (plus an additional \$2 for each additional issue in which the article appears).

Disclaimer

The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

The world's first and oldest

National Radio Society

Founded 1910

Representing

The Australian Amateur Radio Service

Member of the

International Amateur Radio Union

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Canberra Liaison Officer	
Richard Jenkins	VK1RJ

EDITORS COMMENT

Going...Going...When...?

THE TITLE POSES a question to which I have only an approximate answer. You will have seen the announcement on page 27 of the last month's AR, which contains the news that I wish to retire, and seek someone to take the job over. The big question is, precisely when? Any time after August will suit me; and here we are, it's August!

This is the month in which I complete 15 years and 3 months as Editor of AR, to set a new record. Tom Hogan VK3HX held the chair from March 1941 to May 1956 (15 years and 2 months). Tom became Silent Key some decades ago.

One factor not emphasised in the announcement is that a period of some months overlap between editors would benefit all concerned, but particularly the new Editor.

An arrangement, which the armed forces describe as "handover-takeover". So to whom will I hand over? We may know by the time you read this!

Mention of the armed forces reminds me of the RAAF Williams Amateur Radio Club, which has been in what might be described as hibernation for a couple of years. This came about because the RAAF School of Radio, which had been at Laverton, was moved to Wagga Wagga some time back, thereby removing many of the radio club members. One result is that there are now fewer WIA-accredited examiners in Melbourne's Western Suburbs than was the case while the club was active. So there is something I might be able to do rather than just "twiddle" thumbs after my successor takes over! Mind you, I'm not really looking for work, though! Are there any volunteers with a little spare time?

Bill Rice VK3ABP

Editor

NEW WIA MEMBERS

The WIA bids a warm welcome to the following new members who were entered into the WIA Membership Register during the month of JUNE

L21168	MR E KELLY	VK3TPM	MR P MITCHELL
L31548	MR I BEVAN	VK3XBW	MR B WINTON
L50366	MR A DAWSON	VK5AB	MR P MEACHAM
L50532	MR T R MCBAIN	VK5AH	MR A HUNT
VK2AEZ	MR E MARSTELLA	VK5ASN	MR J HARRIS
VK2IOT	MR G TULLY	VK5ZL	MR M G WHITE
VK2LB	MR A S RADFORD	VK6BSW	MR H C BUTLER
VK2TPS	MR R MAIN	VK6DJ	MR E LUCAS
VK3AMM	MR M MUXWORTHY		

<http://www.wia.org.au>
check out the **WIA** webpage today!



Comment

Federal President, Peter Naish
VK2BPN.

WIA goes into bat with the ACA

The most important role of the WIA is to look after the interests of Australian radio amateurs and to ensure that they can pursue their activities with the knowledge that those who regulate the radio spectrum respect them.

BECAUSE IT IS a national role, the task of representing radio amateurs to the Australian Communications Authority (ACA) is vested in WIA Federal. For this purpose the WIA/ACA Liaison Committee was established some years ago and it works closely with ACA officers in Canberra to progress and resolve the issues that concern amateur radio operators in Australia. The members of the WIA committee are drawn from the divisions of the WIA and are appointed to the committee by the WIA Federal Council at its annual Convention. Those chosen have the knowledge and expertise required to present and debate the issues with the ACA. However, there are frequent occasions when it is necessary to seek assistance from others not on the committee to provide the liaison team with expert opinion to ensure that the proper information is put to the ACA. This means the WIA is able to present a balanced and informed case to the ACA in an effective and professional manner.

So, how does this work in practice? Because the WIA liaison team is spread throughout Australia, most of the time they work together by correspondence using email and occasional telephone conferences. It's demanding work and the team spends a lot of time preparing and updating issues for discussion with the ACA. At least twice a year, the WIA liaison team meets formally with ACA in Canberra to progress the wide range of issues. These are big meetings occupying most of a day and attended by senior level managers of ACA together with appropriate members of their departmental staff. In between these plenary sessions, there is often the need for ad hoc meetings to consider urgent matters that cannot wait for the next scheduled full meeting. Otherwise, there are written submissions on other less strategic matters that can more effectively be dealt with by correspondence.

The WIA/ACA Liaison Committee has

a Canberra-based liaison officer who is tasked with maintaining a day to day relationship with all those government departments and agencies that have an interest in the amateur radio service. Principally, these are the Department of Communications Industry and the Arts (DoCITA) and the ACA. He ensures that these organisations are continually made aware of the WIA and provides a physical presence in Canberra at all times. Another important associated element of the WIA liaison team is the work performed by the Federal Technical Advisory Committee (FTAC) who provide much detailed and vital technical support to the liaison committee.

How do you as a member of the WIA get your particular concern onto the agenda for the liaison discussions? Your Divisional Council together with your Federal Councillor has the responsibility to bring to the attention of the liaison committee all such concerns. The committee will then consider how it should be handled and will prioritise it in relation to other matters for presentation to the ACA. As you will realise, there is an extremely wide range of subjects and the liaison committee needs to rationalise and amalgamate many of these concerns into a format that can be effectively debated with the ACA. Basically these fall into general categories such as licensing matters, spectrum usage, examinations, technical considerations, special privileges, etc.

It must be remembered that the ACA is manager of the radio spectrum in Australia but their terms of reference are largely determined by the government policy of the day and by international agreements. This means that frequently the ACA cannot grant new or extended privileges to the amateur radio service unless and until it has been agreed by those organisations. That is why it is equally important for the WIA to continue to press for benefits to Australian amateurs at the International Telecommunications Union (ITU) in Geneva

through its membership of IARU Region 3. The ITU is the ultimate body whose recommendations are adopted by the Australian Government through its treaty obligations. All these takes time so progress is unfortunately slow.

Over recent months the WIA has raised a great number of topical issues with the ACA. These include major issues that affect all radio amateurs no matter what their special interests may be. To highlight just some of these, the Liaison Committee has made submissions on the proposed new standards for

- Electromagnetic Radiation (EMR),
- temporary operating licences for overseas visitors and
- possible changes to the ACA's policy on the devolution of examinations.

On matters of vital interest to specific sections of our activity, we have submitted papers on the 80 metre DX window, a request for a better means of access to the LF area of the spectrum, the ever present threat to our VHF/UHF and microwave bands, LIPD's and their incursion into our 70 cm band plus a multitude of other technical and operating concerns.

It takes time and careful attention to detail to finalise any matter. Thanks to the goodwill that exists between the WIA and the regulators, satisfactory outcomes have been achieved and will continue to be achieved, albeit somewhat more slowly than we would desire. The WIA will keep up the pressure on all of the government areas that have a say over our activities.

I hope that this introduction to the WIA/ACA Liaison Committee will provide a better understanding of the work performed on your behalf by dedicated volunteers and will allow a clearer insight into the background to the report given below on the most recent meeting held with ACA. As you will see the range of topics is very wide and includes both technical as well as policy issues.

We will continue to work with the ACA on behalf of all Australian radio amateurs. You can help us by your continuing support of the WIA.

Peter Naish, VK2BPN

WIA Federal President and Chairman of
WIA/ACA Liaison Committee.

WIA/ACA Meeting on 24 June 1999

by Wally Howse VK6KZ

On 24 June the President of the WIA Peter Naish VK2BPN together with other members of the Liaison team Michael Corbin VK2YC, Glenn Dunstan VK1XX, Wally Howse VK6KZ and Richard Jenkins VK1RJ met with officials from the ACA.

The three and a half hour meeting was chaired by Gillian Kempton ACA Manager Customer Access Management Team and a number of ACA officials attended for specific items of business.

Olympic Games (Swiss Timing)

It appears that because of an apparent breakdown in communications between SOCOG and Swiss Timing, there is an application for use of a further segment of the 70 cm amateur band for limited periods in 1999 and 2000 in the Sydney region. The ACA is not happy with this but like the WIA recognises that the Olympic Games have the highest priority with government and that the ACA will do all that is possible to support the success of the games. The ACA noted that further interference to amateur bands cannot be ruled out. The ACA has undertaken to provide greater detail on the proposed use as soon as it is available.

Introduction of EMR provisions on 1/1/2000

Limits on exposure to electromagnetic radiation from radio transmitters are to be introduced progressively in Australia from next year. It is unlikely that amateur radio stations will be covered by such standards from 1 January 2000, but limits should be set during next year. The WIA explained that amateurs need a 'plain language' statement of the rules to allow individual amateurs to understand and interpret the regulation for most situations without a detailed knowledge of the fields and without expensive test equipment. The WIA wants to be involved with the ACA in the preparation of this statement. WIA requests **early input** into the proposed statement.

80-Metre DX Window

In responding to an ACA discussion paper

on this topic, the WIA rejected a proposal that the Amateur Radio Service exchange 18 kHz from the present 80 metre allocation for 18 kHz to extend the present 6 kHz DX window to become 3776 - 3800 kHz. It also rejected the concept that radio amateurs contribute in cash or kind to the fixed and mobile services that would have to move frequency. The WIA pointed out that many of those services had vacated their frequencies since the last survey. It also suggested that the proposal of time-sharing be reconsidered. A copy of the WIA submission is available on the Federal Web page (www.wia.org.au).

Fixed and mobile licence holders had been asked by the ACA about their continuing use of the frequencies below 3794 kHz, the cost of their migration to new frequencies. Responses were due by 28 June. The WIA response will be pooled with these other licence holders' comments and the ACA agreed to a further meeting on this specific topic in August.

LIPD Devices on 433 - 434 MHz

The WIA reported that the problems of interference to the Amateur Radio Service had continued. What was emerging was a de-facto CB band. The WIA would continue to press for an embargo on 2-way voice communication. The ACA maintained its original position, emphasising the commercial need to license the LIPDs and notes that the amateurs are secondary users in this band. ACA makes the point that amateurs are frequency agile and that the operation complained of occupies only a tiny piece of a large amateur allocation on 70 cm. The WIA gave notice that it will continue to press for a ban on 2-way communication using LIPD devices in this part of the 70 cm band.

LF Band Application

The WIA expanded on a paper submitted to the ACA seeking a frequency allocation of

15 kHz between 165 and 196 kHz. The WIA was criticised for not following the advice provided in an ACA letter of January 1995 which had stated that the WIA should pursue an international allocation through the ITU before the ACA would consider this matter. The WIA submission (copy available on the Federal web page) had addressed this matter pointing out that 13 countries already had an amateur radio band in this part of the spectrum and that the ACA had power to make such an allocation. The ACA was insistent that there was a need for "Global Harmonisation". However when pressed the ACA agreed to investigate an extension of the 'experimental licence' concept to bring its terms and conditions more into line with those applying to the amateur radio service.

EME and High power permits

As previously advised to WIA, the ACA needs an "inconsistency clause" to allow variations to the present licence conditions to enable it to issue high power permits for EME operation. Such a clause has been drafted and it is included in a batch with others relating to the Olympics but their progress through the legal process was unknown at this stage.

EMC from Services Using Power Lines

The WIA expressed concerns about potential for interference to HF users from services bringing broad band signals into homes using the copper cable of power lines. The ACA admitted a difficulty in this area because the some of problems lie outside the current legislation although powers relating to EMC were relevant. The WIA has offered copies of international papers on research on this matter.

CEPT and Licences for Olympic Visitors

The CEPT arrangements allow licensed visiting radio amateurs to operate in signatory countries without the need for formal applications for a licence and new call sign. In light of the large numbers of visitors to the Olympics, the WIA urged the ACA to adopt the European arrangements. The ACA was not prepared to accept this proposal. The ACA pointed out that its offices can issue licences promptly, over the counter or by mail application prior to arrival in Australia. The Radio-communications Act also requires an individual licence to be issued.

WIA News

Other matters

The ACA had not been able to complete its discussion paper on its thoughts on advertising the rights to conduct the amateur radio examination service. The WIA urged a quick conclusion to this matter as uncertainty affected WIA planning and discouraged those providing the service.

The ACA confirmed that beacon callsigns would be limited to the block RSA to RTZ.

The WIA indicated that it would be continuing to press for provision to allow for remote unattended HF radio transceivers to be controlled over a VHF/UHF link to allow access to HF bands for appropriately licensed users. It noted the ACA concern over unattended transmitters and the prevention of unauthorised operation of such transmitters. The WIA will present a paper on this matter.

The WIA observed that recently the financial advantage of a 5-year licence has all but disappeared. The ACA confirmed this was the case in the latest fee schedule and have undertaken to look again at this change.

The next meeting is scheduled for Thursday 2 December 1999 and specific discussions on the 80m DX window are expected in August.

ar

SNIPPETS

People you should thank:

Rutherford, Faraday,
Armstrong, Ohm, Maxwell,
Franklin, Norton, Bell, Volta,
Kelvin, Oersted, Edison, Watt,
Weber, Ampere, Tesla, De
Forest, Morse, Schering,
Cuneaus, Gray, Leclanche,
Moyes, Thevenin, Gauss,
Wheatstone, Cooke, Seimens,
Reber, Schottky, Woolrich,
Barden, Plante, Wilde,
Schmitt, Hertz, Janski,
Gramme, Baudot, Swan,
Hughes, Farranti, D'Arsonval,
Ayrton, Marconi, Fleming,
Heaviside, Hayes, Thomson
and Brattain.

How many do you know of
and what did they
contribute to your hobby?

Can you complete their
names?

(NB the order has been purposely
randomised.)

Get Well soon VK2NH

As reported in *Amateur Radio* magazine last month, David Thompson VK2NH is recovering from major surgery. In the meantime, I have been asked to pick up the proverbial ball and run with it, so here goes...

WIA News Available by Email

There's been a sudden outbreak of email lists recently, thanks to the free services offered by www.onelist.com. For those who miss the live VK2 and VK4 Division broadcasts, and who don't have access to packet and the World Wide Web, the news is available via direct email. Monthly news bulletins and other announcements from WIA Federal are also available in the same way.

While we're at it, I've also created a new discussion forum for those wanting to take positive action to promote the hobby. These lists are open to both WIA members and non-members. Details of these and other Email lists can be found on the WIA Federal web site at www.wia.org.au/links/MailingLists.html.

You can subscribe to the lists mentioned above simply by sending a blank email message to the following addresses:

VK2 (New South Wales) news

vk2news-subscribe@onelist.com

VK4 (Queensland) news QNEWS-subscribe@onelist.com

WIA Federal news

wia-subscribe@onelist.com

Promoting Amateur Radio
AmateurRadioPR-subscribe@onelist.com

If you'd like to set up your own Internet mailing list, you can do so easily, and for free, by visiting www.onelist.com

Y2K - Why Indeed?

Readers will probably notice the occasional Y2K-related item in this column, as the big day approaches. In Y2K circles, the acronym TEOTWAWKI (pronounced "tea-oh-talkie" — short for "The End Of The World As We Know It") still gets bandied about, though less frequently as facts replace speculation about the extent to which the misnamed "Millennium Bug" is being addressed.

While the doomsayers are starting to run out of steam, communication disruptions may still occur, and not just due to technical

Prepared, researched and compiled by
Assembled by Richard Murnane VK2SKY
(Sources acknowledged where known)

factors. It's quite possible that the unique communication services that Amateurs can provide may then be in demand by the wider community — and if that happens, will YOU be ready?

ZL: "Expect 3 Days Of Y2K Disruption"

New Zealand's Department of Internal Affairs has advised citizens to prepare for up to three days of disruption to major services in the case of Y2K-related problems around the new year period.

New Zealanders are well aware of the disruption unexpected incidents can cause. Severed cables caused the loss of power in Auckland's business district for several weeks. The country is hoping Y2K-related problems are not about to cause similar chaos...

(from Sanger's Review of Y2K News Reports, 30 June 1999

<http://sangersreview.com/>)

"The Other Y2K Problem"

As if computerised calendars weren't problem enough, there's "the other Y2K problem", which will result when our old friend, the 11-year sunspot cycle, reaches its peak in the first few months of next year.

According to a report in *Wired News*, we could experience "electrical power outages, satellites veering off-course, and cellular phone and pager disruptions as the number of sunspots and flares, solar storms, and other "space weather" hits its cyclical maximum."

Richard Altrock of the Air Force Research Laboratory in the aptly named Sunspot, New Mexico, has devised a new method of observing and timing sun-surface activity. Using this method, and applying it to data collected over the last three solar cycles, he has predicted the next solar maximum will occur between January and April 2000.

According to his analysis, Cycle 23 sunspot number will peak at around 160, as they did during Cycles 21 and 22.

Solar events during sunspot maxima can disrupt radio communications, create auroras, and cause enough drag on satellites to make them lose altitude, according to JoAnn Joselyn, of the National Oceanic and Atmospheric Administration Space

Environment Center. Joselyn says that "magnetic field fluctuations can burn out power companies' electrical transformers and cause power outages such as those that occurred in 1989 in parts of the US East Coast and across Quebec."

Using a satellite to monitor the solar winds, NOAASEC researchers will be able to give companies and the public 30- to 60-minute advance warnings of increased solar activity incidents.

(From Wired New, via HamRadio-Online, details at <http://www.wired.com/news/technology/story/19954.html>)

Maori Win Wireless Rights

Also from *Wired News*: in New Zealand, the Waitangi Tribunal has ruled that the indigenous Maori people own the radio spectrum.

Back in March, the New Zealand's auction of radio spectrum around two gigahertz was postponed when, just three days before the auction, the sale was challenged by the Maori community, who claimed ownership of the radio spectrum. The auction was put on ice for three months.

In 1840, the Treaty of Waitangi gave European settlers the right to stay in New Zealand and promised the Maori people that they would continue to own their lands, forests, and fisheries for as long as they wished, and promised to protect all things valuable to Maori people. It was the Waitangi Tribunal's job to determine whether the 1840 treaty also applies to radio spectrum.

Judge P.J. Savage argued that "all or a generous portion of the net proceeds of the auction of the 2GHz spectrum be devoted to promoting, developing, and protecting *te reo Maori* [the Maori language] and Maori culture."

While the NZ government is not obliged to accept the Tribunal's recommendation, Maori interests are already arguing that the government must enter into negotiations about the "fair and equitable" division of the spectrum.

Professor Whatarangi Winiaata has claimed a precedent, where New Zealand's fishing rights were split evenly between the government and Maori. Whether this happens with the radio spectrum remains to be seen.

(More details at <http://www.wired.com/news/news/politics/story/20546.html>)

VK ARDF team back from Region 3

ARDF Contest Australia's finest radio foxhunters recently returned from the Third Region 3 ARDF (Amateur Radio Direction

Finding) Championships in Nonsan, Korea.

The Mongolians, Kazaks and Koreans took most of the prizes, but the WIA team managed to improve over their performance at the previous event in Townsville, achieving 4 out of 6 in Region 3.

The event was held in amongst farmland and rice fields and very dense bush. Jason VK4YOL was doing nicely in one event, before he fell over a tree root, damaging both his ankle and receiver!

During their visit, the VK ARDF group visited the KARL Ham Museum, and appeared on a local TV station.

Bruce Paterson VK3TJN reports the VK results as follows.

Two metres OM Division:

VK3TJN 5th	VK3YNG 9th
VK4YOL 15th	VK3HDF 19th

Two metres Old Timer Division:

VK3WWW came 7th in Region 3.

80 metres OM Division:

VK3HDF 8th	VK3TJN 13th
VK3YNG 14th	VK4YOL 17th

80m OT division:

VK3WWW 8th.

Congratulations to entire VK ARDF team on their fine showing at the championships. (vk4yol/apcnews, via QNEWS)

DX ET with your PC!

Late in May, researchers at Berkeley University in California released the SETI@home screen saver, which uses your PC's unwanted CPU cycles to download and analyse data received by the Arecibo Radio Telescope in Puerto Rico. SETI@home then analyses the data for patterns that might indicate the presence of artificial signals originating other worlds.

The project was devised because the researchers could not gain sufficient time on government supercomputers to analyse the 35 gigabytes of data that Arecibo collects each day. So, instead of using one big computer to do the work, they decided to use lots of little ones. So far, over 600,000 enthusiasts around the world have joined the project; I estimate that so many Pentiums working flat out could analyse the data at least five times as fast as Arecibo can collect it!

On 1st July, SETI@home was upgraded to version 1.05, correcting some minor problems with the original release. As with version 1.0, the download is free.

You'll find the link to the SETI@home project on the WIA Federal home page at www.wia.org.au. While you're there, why not join "Team VK" — Australian Amateurs working as a team in the great hunt for ET!

Wow, That's Fast!

The speed increases on modern PC's don't raise too many eyebrows these days, and Pentium class machines running at up to 600 MHz will soon be commonplace.

But how much faster can we go? Well, Siemens Semiconductor has announced the world's first 45 GHz bipolar transistor. Those SHF Amateur bands may not be quiet for very much longer!

The BFP520 can be used as an oscillator up to the full 45 GHz, and it features a noise figure of 0.95 dB, with a gain of 23 dB at 1.8 GHz.

More details of the new transistor can be found in the May 1999 issue of *CQ* magazine (page 52).

Cross-Channel Radio Centenary

The 100th anniversary of Guglielmo Marconi's first radio contact across the English Channel was celebrated in March, with a re-enactment of the transmission in the presence of Marconi's daughter, Princess Elettra.

GB100SFL was activated from South Foreland Lighthouse in Dover, where Kentish Amateurs received the message from Jean-Claud Barreau F5KBM of the Wimerex Radio Club. The message: "*Greetings from France to England across the ether.*"

Princess Elettra made several contacts herself with F5KBM, and had several other contacts with British Amateurs. She said she appreciated the work of Radio Amateurs to commemorate her father's work.

(RadCom, May 1999)

Here in Australia, the Wahoonga Amateur Historical Radio Association re-enacts the first direct wireless contact from Britain to Australia, on the 22nd September each year. Keep an ear out for the special event station VK2WAH on the day.

All HF Bands for 5 wpm!

Could it happen here? In the UK, two new licence grades have been introduced, allowing access to all HF Amateur bands at 100W PEP, to Amateurs who have passed a 5 wpm Morse test. They can also operate above 30MHz at 400W PEP.

The Radio Society of Great Britain believes that allowing full HF access after passing the lower speed test "will allow greater access to the full range of facilities that Amateur Radio has to offer, and broaden the appeal of the hobby to a wider audience. More amateurs will have the opportunity to experience worldwide communications, and newcomers to the hobby will find it possible to make contacts on a wider range of frequencies."

Existing class A (full call) licensees will

be unaffected; they can transmit at the higher power of 400W PEP. The new "Full A/B" licensees will be identified by callsigns in the M5xxx series.

(RadCom, June 1999)

ACA signs first Services Agreement with SOCOG

The Australian Communications Authority has signed a Services Agreement with the Sydney Organising Committee for the Olympic Games.

Under the Agreement, the ACA will be required to provide a reliable communications environment, free from harmful radio interference, that will allow SOCOG to stage the 2000 Olympic Games and the Paralympic Games (the Games) efficiently and safely.

ACA Chairman Tony Shaw said that the value of providing the services to SOCOG is \$5.2 million and the ACA will be fully reimbursed for this expenditure from the \$32 million Federal Budget allocation for the Games. This is the largest expenditure by a Commonwealth agency in providing assistance to the Games.

"While the services provided are part of the ACA's ongoing responsibilities, ensuring there is no radio frequency interference will be vital for international broadcasters, the staging of events and emergency services operations during the Olympic and Paralympic Games in Sydney in 2000," Mr Shaw added.

The fully costed services to be provided by the ACA under the Agreement include inspection of venues to anticipate radio frequency interference problems, interference investigation, and testing of communications equipment.

The ACA's services to SOCOG also include the licensing of radio-communications, for which special provisions are being made for the Games.

The ACA is required under its enabling legislation to recover the costs of its operations through a range of cost recovery based fees and charges.

(from ACA Media Release No. 38 - 30 June 1999, www.aca.gov.au/media/38-99.htm)

A vital component of the ACA's service to SOCOG is the use of part of the 70cm band, which Amateurs and the Australian Defence Forces have "lent" to SOCOG for the period from 31 March 1999 until 31 December 2000. During this period, Amateurs must not transmit between 421 MHz and 432 MHz when they are within 150 km of the Olympic site at Homebush Bay in Sydney. Full details can be found at www.wia.org.au/BandPlans/OlympicsUHF.html

ar

EDUCATION

Brenda M Edmonds VK3KT
PO Box 445, BLACKBURN VIC 3130.

Thank you to those who have written to me about some of my comments in recent columns. In particular, I received some valuable feedback from the February column in which I queried the mechanics of the examination procedures.

Now I would like to consider the syllabuses for the two levels of Theory examination.

If you look up the current syllabuses as promulgated on the ACA web site, you will find that, apart from some re-arrangement, the AOCIP theory syllabus is practically unchanged from that published in 1985. The NAOCP syllabus has been upgraded to some extent to take into account the increased privileges gained by Novice operators in recent years.

The last time either syllabus was reviewed was in 1984. The Examination Question Bank Committee carried out its own review when working on the question banks, but discussion with the ACA on the modifications which we recommended have been postponed until the examination development procedures are clarified.

In the 15 years since 1984, technology has made giant steps. It worries me that much of the content of the syllabus is, at best, obsolescent if not totally obsolete and irrelevant to present-day operation. I am not saying that the theory of radio has changed. It has not. But the "basics" as taught for an amateur radio course have become lost in the technicalities of "chips" and miniaturisation of components which replace the discrete components of the 70s

and 80s. Does it matter how a PLL (or a speech processor, or a filter) works when it comes in a chip that needs a magnifying glass to get the leads connected right way round?

So should we be examining on chips and ready-made sub units instead of separate components? Perhaps all that is needed is detail of transmitters, receivers, power supplies etc to block diagram stage, with one IC for each stage. It is currently possible for a candidate to pass the exam at either level without ever having seen a resistor or a capacitor.

Have a look at the present syllabuses. How much of them could be left out, and how much needs to be added to bring the theory into the new century? Propagation theory has not changed much. Antenna principles do not vary, and antenna designs are fairly standard. But a circuit diagram of a 1980 transceiver is very different from its current counterpart.

I would be pleased to receive comments from you, either newcomer or old timer. I trust that there will be a formal reconsideration of the syllabuses as soon as the development is completed.

ar

How fast can news travel?



It took five months for Queen Isabella to learn that Columbus had reached the new world, two weeks for Europe to learn of Lincoln's death and just 1.3 seconds for the world to learn that man had stepped onto the moon.

SNIPPITS



Divisional News

VK1 Notes

Forward Bias

Peter Kloppenburgh VK1CPK
Our guest speaker on Monday, 28 July 1999, was Malcolm Brinkley of Telstra. Malcolm spoke on the Code Division Multiple Access (CDMA) technology, that is currently being installed to replace the analogue mobile phone service in Australia. It is a complex spread spectrum technology that combines some of the best features of GSM and AMPS, including enhanced privacy, extended range (60 km standard with 120 km possible in modified sites), and increased traffic density per cell. Although this technology is new to most of us in amateur radio, the explanation of how CDMA works was explained lucidly by Malcolm, giving examples and comparisons with GSM and other coded systems. Most of us came away with a better understanding of how it is all going to work and we will watch the introduction of this technology to Australia with interest.

Mt Ginini news

The long awaited improvements to this prime site have had to be put on hold until Spring due to the access road being impassable during Winter. We only missed out by a couple of weeks; VK1TEE and VK1GH made a dash for the site a few weeks ago in a suitable loan vehicle with the new mast on board, only to be turned back by the road conditions, having iced up just days before. Replacement equipment includes a new mast, feeders and antennas, plus facilities to extend the linking of the 70 cm voice repeaters.

Members of the VK1 Division have recently installed the first 2 metre WICEN repeater on a prime site in the Brindabella Mountains, 30 km West of Canberra City. A temporary facility on the site was extensively tested, and used in support of the Car Rally in May. The advantages of a high quality, WICEN dedicated repeater on a prime site became obvious very quickly. RF coverage was extensive with good signal strength in the operational area. The WICEN dedicated repeater is an essential part of the plan to foster more member activity in training for possible civil emergencies. The WICEN contact person is

Phil Longworth, VK1ZPL. You can reach him by phone on: (02) 6241 5797.

The Division attracts donations in the form of hardware from a variety of sources. Some donations come from companies and others from individuals. These donations consist mainly of items of equipment, components, or coaxial cables. Some of them come from deceased estates. That means that boxes full of bits and pieces are available for the taking. If you are interested in home brewing, it is worthwhile to come to the general meetings where these donations are always announced. The latest donation consisted of long lengths of coaxial cable ie RG-214 and RG-213. If anyone is interested, please contact Gill, VK1GH, our president. The next general meeting of the Division will be on 23 August 1999, in Room 1, Griffin Centre, Civic, Canberra City.

Cheers to all.

pkloppen@dynamite.com.au

VK3 Notes

WIA Victoria News

By Jim Linton VK3PC

Remembrance Day Contest

Thank you to those who have already pledged support for the "Team Victoria" assault on this month's RD Contest in an effort to have the trophy return to VK3.

We won this contest five years in a row until 1994 when the rules were changed in the name of making it fairer for other less performance driven callsign states, and much harder for VK3 to win.

However with VK3 taking out the wooden spoon last year, and the contest winner being the most improved state on their previous year's effort, we can win the contest this year.

Remember for VK3 to win you have to participate in the contest by exchanging numbers, but also submit a valid log to the contest coordinator.

Why not support VK3 this year, read the contest rules in AR magazine and give it a go. If you're unsure of what to do contact the WIA Victoria office, or if you're also a member of an affiliated club, it will have the answers to your questions.

Our clubs are getting right behind the

"Team Victoria" campaign; individual members are encouraged to join the winning team in the RD Contest on 14-15 August.

Even if you've never been in a contest before, it is very simple, requires about 30-minutes on air as a minimum, a contest log sheet, a declaration, and a 45-cent stamp.

GST on the way

The inevitable changes to occur next year with the introduction of a Goods and Services Tax are to affect the operations of WIA Victoria.

The WIA Victoria Council is currently planning for the GST. Preliminary information received from the Australian Tax Office indicates that the new tax will affect the operation of all clubs and membership organisations.

The GST not only has the potential to increase operational overhead costs and membership subscriptions, but compliance will most certainly lead to an increase in the administrative workload.

Our Chief Executive Officer, Barry Wilton VK3XV, is examining options available to minimise the impact of the GST on members.

This is being done in conjunction with our auditors, Barnard, Baudinette and Company.

The new tax will affect the way we provide membership services and the sale of any books and disposals equipment. It may well influence the manner in which future subscriptions are collected.

DX callsign addresses

The WIA Victoria Office has the 1999 International and North American Callbook on CD ROM, and a computer available for members to use.

If you need an address, and can't get to the office, then telephone Joy on 9885 9261, give her the callsigns you need the address for, and she will provide these if you ring back on the next working day.

Broadcast review

As a result of member feedback and research, the Council has decided that 10.30am on a Sunday morning is not an ideal time for the VK3BWI broadcast.

Our modern lifestyles have changed over the past decade or so, and fewer people are able to listen to a broadcast on Sunday mornings.

The Council, after careful consideration, has decided to end the VK3BWI transmission on Sunday mornings, but maintain the Sunday evening transmission which goes to air at 8pm.

Until now the Sunday night transmission was on 80 metres and has been very well

received. From now on, the Sunday evening broadcast will go on out all broadcast frequencies.

The Sunday morning broadcast will continue until the Remembrance Day Contest in August, and then stop.

From the first weekend in September, the main broadcast will be at 8pm on Sunday night, and there will be a transmission on a weekday night - the day and time is yet to be decided.

Upcoming events calendar

Remembrance Day Contest

This annual contest is in memory of those WIA members who paid the supreme sacrifice during World War II. It is held on the weekend closest to the date when hostilities ended in the Pacific - this year it starts at 6pm Australian Eastern Standard Time, on **Saturday August 14**, and runs for 24 hours.

FAMPARC Hamfest

The Frankston and Mornington Peninsula Amateur Radio Club will hold its Hamfest on **Saturday, 21 August**.

Inquiries to Peter Brennan VK3JPB after hours 9789 9028.

Shepparton and District Amateur Radio Club Hamfest

Sunday September 12 at the Shepparton Youth Club Hall behind the High Street Safeway complex. Traders begin setting up at 7am with the doors opening to buyers at 10am.

Jamboree On The Air - JOTA

Saturday 16 Sunday 17 October, the annual Jamboree On The Air which began in 1958 will involve more than 400,000 scouts and guides around the world "getting together" via amateur radio.

VK6 Notes

Volunteers and Membership

I have just been listening to the Divisional Sunday broadcast, on this deadline day for the Notes, and have been reflecting on what a useful service this broadcast really is, when it can so easily be taken somewhat for granted.

It is certainly an appropriate and very convenient medium for keeping us all in touch with events of common interest. By all accounts some Divisions are struggling to produce broadcasts on a regular basis. We are very fortunate in VK6 to be in a position to enjoy what is surely one of the better weekly productions in the country.

I am well aware that this sort of thing doesn't happen without considerable expenditure of private time by the various volunteers from the VK6 Division (usually by people with already very busy lives).

To this must be added the efforts involved in maintaining many repeaters and beacons (WARG and VHF Group) for the common benefit, general management of our hobby (WIA Councils), and in organising and usually funding several other mutually beneficial "Ham Radio" activities.

It is self-evident that these efforts are appreciated by current WIA members, but what of the remainder? Surely the "hold-outs" must appreciate them too, and given that, you would expect most who have made the effort to struggle through the exams to be fair-minded fellow travellers. Is it not truly baffling why the vast majority of Hams are not supporting their efforts by re-joining the WIA? Even if the WIA does not appear to be taking the hobby in the direction desired by the individual at the moment, so what? Grievances, imagined or otherwise, can only be harboured for too long - life is quite short! I must say, I just can't understand it at all.

Bacons Back

The VK6RSX Beacons at Exmouth Western Australia, which were disabled by Cyclone Vance in March this year, have been restored to service from 11th July 1999. The beacons operate continuously on 50.304 and 144.576 MHz with 50W into omnidirectional, horizontally polarised, antennas. The WA VHF Group wishes to thank Rex VK6ARW of Exmouth and his associate Ned Kelly (yes...Ned Kelly) for their efforts in restoring the system amid a great number of other demands following the severe damage to the town by the cyclone. (Thanks to Don VK6HK for this).

From the Minutes - Council Meeting 6th July 1999. Just a few briefs before closing - the sun is shining outside and it's Sunday! Wal VK6KZ, invited to attend in his capacity as a member of the Federal WIA/ACA Liaison Team spoke informally about the Liaison Committee meeting and gave the Council an insight into the business conducted and the tone of the meeting. He reported that there is to be a further special meeting in August to discuss the 80 Metre DX window, with the next formal meeting scheduled for December 2nd. The impact of the GST was discussed.

There had been no response to a broadcast call for an Education Officer. Tony VK6TS will make a further plea. Gwynne VK6JG had returned from overseas and successfully negotiated the running of another theory course at Tressillian Centre. The course is scheduled to start on 19th July, 1999. About seven candidates had enrolled, the desirable minimum being eight. A request had been received from WARG requesting support for a proposed new repeater at Victoria

Park. Frequencies proposed are: (a) 438.425 MHz Transmit - 433.425 MHz Receive (b) 146.775 MHz - 146.175 MHz (c) Link Frequencies of 420.000(?), 440.150 and 440.000 MHz

As these frequencies conform to the Band Plan, the Secretary was requested to prepare the usual letter supporting the WARG application to the ACA.

Dave VK6IW tabled membership statistics, there being no new members for the month (Like I said, I don't understand it, I must be missing something - somebody please explain).

It was reported that call-backs after the broadcast had reached a total of 150 recently, with greater participation from country members.

General Business items: (1) Cliff VK6LZ will arrange to present Gwynne VK6JG with his plaque as "Amateur of the Year" for 1998, for services to Technical training. The presentation will be made on the opening night of the new training course on 19th July. Well done Gwynne! (2) The availability of possible Group sites was discussed, including one at Victoria Dam and Kalamunda Western Power sub station. Will VK6UU is to examine the latter and had already distributed photographs of Victoria Dam. Both have disused masts and buildings. Investigation continues.

So that's it from Toodyay until next time - see you on 2m SSB and on 6m (some upgrading going on here).

73, Chris VK6BIK
(chrismor@avon.net.au)

VK4 Notes

Qnews

By Alistair Elrick

WIAQ Councillor and QTC Editor

The WIAQ General Meeting on 17th July was quite well attended by a dedicated section of the membership. The discussion on the new Constitution took up most of the session and resulted in a very comprehensive document to serve the members well in to the future. All other matters before the meeting to deal with the continuing liquidation procedure were passed. This should allow the Incorporation to be completed in a timely fashion.

The Annual Dinner that followed was a great success, and it was good to see a cross section of staunch WIAQ members, Family members and others interested, who booked and attended this, the re-instatement of the once Annual Dinner. VK4's BB and BBS certainly got value from the sumptuous Bronco's Leagues Club smorgasbord menu.

Mick VK4JHM and Wayne VK4NWH both have forwarded a report on harmful

Andrews

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SNIPPETS



(With reference to a correspondent)

The young specialist in English Lit,
...lectured me severely on the fact
that in every century people have
thought they understood the
Universe at last, and in every century
they were proved to be wrong. It
follows that the one thing we can say
about our modern 'knowledge' is
that it is wrong.

... My answer to him was, '... when
people thought the Earth was flat,
they were wrong. When people
thought the Earth was spherical they
were wrong. But if you think that
thinking the Earth is spherical is just
as wrong as thinking the Earth is flat,
then your view is wronger than both
of them put together.'



Isaac Asimov

(1920-1992) b. Petrovichi, Russia

The Relativity of Wrong, Kensington Books,
New York, 1996, p 226.

interference, caused by a walkie talkie
legally available to any user, which has
forced the closure due to the device having
the sub-audible tones available to open the
repeater. As Mick says "It could be your
70cm repeater next!"

(Mick Lohse VK4JHM contributed with
permission from the Logan Beaudesert
Amateur Radio Group.)

Radios transmitting on 433 MHz led to
interference on the 438.750 MHz
repeater. These radios must be transmitting
on or near 433.750 MHz. A lot of language
has been coming over the 70 cm repeater
side. Is this the start of uncontrollable
intruder invasion on 70 cm, especially with
experimenters maybe doing mods to these
radios? This is a real concern for the future
for amateur radio!

(Wayne VK4NWH)

Several weeks ago the RADAR Club
(Rockhampton and District in VK4) was
fortunate to be given a display and
demonstration of LIPD's by Jack VK4JRC.
It was not without a little suspicion that a
strange, regular but intermittent 'packet
type' signal heard on the local 70cm
repeater was investigated by Noel
VK4ZAR and John VK4AJS. Concluding
that it was not a legitimate packet
transmission they contacted Ron the
manager of the local ACA who verified its
existence and with his expertise and
equipment set about finding its origin.

Driving a short distance away from his
headquarters which is located with other
tenants in a central city office building Ron
noticed the signal strength weakening and
then as he returned to the building it was
once again full strength and in fact the
source of the signal.

The rumour suggesting that the signal
was coming from under Ron's desk has not
been confirmed or denied but the twenty
five milliwatts over the eight kilometre
distance to the repeater suggests a good
propagation path.

This is probably the first of many such
intrusions into what we assumed was our
section of the band. It seems that a shift in
frequency for repeaters out of the allocated
(both local and international) LIPD band is
essential and that an updated band plan must
be given priority in order to avert temporary
fixes to this problem.

On a brighter note, the open day at
Redcliffe Radio Club was a great success
and the comment was that it was easier for
some visitors to attend day-time events and
this had made a great deal of difference to
the attendance. Also a great promotional
idea from the Club, as they now have an
operational shack for the use of amateurs
who do not have the facility to be on-air

from their homes. Some members live in
flats, caravans etc. or just do not have the
room or finances to run HF, VHF, UHF and
Packet. Redcliffe also have supervised on-
air activities for non licensed members.

John Stevens VK4AFS, our Office
Administrator, has supplied the 6 monthly
figures on membership for the Division and
they are quite encouraging. June figures
when compared with the membership
figures of January show a little over 7%
increase. Well done!

Les Steel VK4ALS, the TARCinc.
WICEN Co-ordinator says the Inkerman
Station event last weekend was a great
success. WICEN resourcefulness was put to
the test when they discovered that the
repeater antenna was somehow or other
"lurking back at home". The fact that all
operators attending had packed spare
"everything" helped with being able to face
setbacks with a minimum of delay and fuss.
The 22 endurance riders participating in
events that took the more experienced over
80km of countryside, whilst less
experienced riders undertook at 40km
training course. VK4ALS Les thanks all
WICEN members who attended the
weekend. The group will, again support the
Townsville Horse Endurance Riders
Association (Inc), on 11th September to
Sunday 12th September in the Woodstock
Area, Sat arvo to Sun arvo.

The Tablelands Radio and Electronics
Club is keeping the true Amateur spirit
alive. A TREC Project is nearing
completion, where guided by Ray VK4TFT,
TREC members are modifying FM92E
transceivers to the 6metre band. A lot of
work but well worth the finished product!

73's from Alistair

ar

STOLEN

Alan (VK6CQ) here. Unfortunately my
brand new Yaesu FT - 100 was ripped
out of my car in Adelaide during my
drive over to Tasmania. Real mess of
the car door and under the seat (where
it was bolted) was made to get it out.

Not much use to anyone else minus
the manual & connecting cables, but I
guess the idiot who took it thought it
was a CB or CD player.

I would appreciate it if you could
keep an eye out for it — **Serial No 9F0
420 36 (9F0 420 36)**. You never know,
it may show up in a Cash Converters
sometime.

CLUB NEWS

Healesville Amateur Radio Group Inc.

Our annual hamfest will be held on Sunday 26th September 1999 at the Healesville Memorial Hall, Maroondah Highway Healesville. Time is 1000 hrs till 1400 hours. Doors open to traders at 0830 hours Entry \$3. Tables \$15 per 8 foot table. Book early to avoid disappointments as last year people were turned away. Refreshments will be for sale by Healesville Girl Guides with Tea and Coffee supplied free by HARG.

For more info or bookings please phone Gavin (03) 5968 8482 or Carol on (03) 5962 6098.

Yours in Amateur Radio, Graeme Tremellen VK3GPT, Honorary President, HARG.

The North-East Radio Group (NERG) will again be holding classes for the NAOCP commencing early August and running on Tuesday nights for approximately 11 weeks followed by a trial exam. The exam proper will be held a few weeks later at a time convenient to candidates and examiners. Printed notes on various topics and Morse tuition are included in course fees. For further information please contact Stephen Warrillow on 9436.

0435, at P.O. Box 416, Rosanna VIC 3084 or at swarrillow@hotmail.com.

Riverina Field Day

The Wagga Amateur Radio Club presents the Riverina Field Day on the 7th & 8th of August 1999. The Riverina Field Day is held annually and is held alternately in Albury and Wagga Wagga. The 1998 Field Day was hosted by the Albury club. In 1999 it is Wagga's turn.

The Field Day is a get together for Radio Amateurs and enthusiasts with a dinner on the Saturday evening and the field day proper on the Sunday being held at the Koorringal High School Gymnasium. There will be trade displays of new and used equipment, lectures on radio related topics, private trading tables for disposal of equipment, talk-in and hidden transmitter hunts.

Details of the program, dinner, available accommodation and map of the location

of Koorringal High School are available on the club's web page at <http://hamgate.wts.com.au>. Alternatively contact may be made with John Eyles VK2YW on Phone (02) 69265471 H or (02) 69332363 BH or via E-mail to jeyles@csu.edu.au.

Central Highlands

VK4JEM Eddie advises the date for this years gathering is the 4th and 5th of September. The club has booked accommodation in 12 cabins for whoever is coming but a deposit is required. \$10 to Gordon VK4KAL at Rubyvale or contact the Sunrover Resort direct phone (07) 4982 3677.

SUNSHINE COAST SUNFEST - the Ham Radio Day put on each 2 years by the **SUNSHINE COAST CLUB** is to be held at Nambour Showgrounds August 28. SARC are at present negotiating a reduced rate for weekend cabins at one of the local resorts. Maybe some "out of towners" might like to stay for the sights of the Sunshine coast and a little local hospitality. Table and display space bookings to Angus 5443 2074 or write to **SUNFEST Coordinator**, 285 Main Rd Maroochydore 4558. Tables are available at \$15 per table and as space is at a premium SARC are asking for firm bookings by 31st July.

Special Interest Groups — Radio Scouting - JOTA

(1st JOTA Circular 1999 World Scout Bureau, Geneva, June 1999)

42nd Jamboree-On-The-Air, 16 - 17 October 1999.

What is the Jamboree-On-The-Air?

The JOTA is an annual event in which about 500,000 Scouts and Guides all over the world make contact with each other by means of amateur radio. Units may operate for 48 hours or any part thereof, from Saturday 00:01 h until Sunday 24:00 h local time.

How can I take part?

To take part in the JOTA Scout groups enlist the aid of a licensed amateur radio operator. The circular states: "Such a person can

easily be found by contacting the WIA. Radio amateurs throughout the world are very keen on helping scouts to take part in the JOTA."

Finally.

Radio Scouting and the JOTA in particular is an excellent opportunity to meet Scouts, Guides and others from many countries.

(Richard Middelkoop PA3BAR World JOTA Team)

JOTA BROADCAST REBROADCASTERS TO DATE. (Qld list - other states welcome to supply same.)

These Amateurs and stations will combine with the national scout frequency stations to bring you the JOTA address this October, VK4 Originating station on 147.000 MHz will be John VK4AFS, 160 m 1.825 by Ivan VK4AIF, 80 m - 3.605 by Wayne VK4NWH, 40 m - 7.118 Rebroadcaster Paul VK4BGT, 15 m 21.175 Peter VK4NJQ, 10 m 29.660 < 2 m linked system by VK4ZMM, and originate if John, VK4AFS is unavailable.

Rick P29KFS will retransmit on the 147 repeater in Port Moresby and thinks Norm will do the same at Ukarampa as he has a scout troop there and one of the JARL supplied HF radios for their use.

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If you have some club news to share.

Or an event to publicise.
this is the place.

The

CLUB NEWS

pages are your pages.

Send your information to

The Editor **Amateur Radio**

PO Box 2175

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VIC 3161

email armag@hotkey.net.au

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ALARA

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New Method Of Communications

At last, I have extended my opportunities for communication. I am now on email so there should be no lack of information flowing in to me for inclusion in this column. Well, that is what I have been led to believe by the advocates of the World Wide Web. My email address is: geencee@picknowl.com.au

Please do use the address if you have made an interesting contact or have some information to share. The more you tell me the more I can tell others.

Reminders.

JOTA will be with us soon.

If you have participated previously, why not make contact with the groups and suggest they do it again.

If you have never participated, maybe this is the time to start. It can be a lot of fun and is a marvellous way to introduce girls and boys to the wonders of amateur radio.

If there is a Guide or Scout group in your area, contact them, as it is more likely that you know about them than visa versa. Decide whether it would be more suitable for the group to come to your shack or if you should take some portable equipment to set up in their hall. This can often just be a question of space; yours as well as theirs. You will certainly have enough willing hands available to help raise masts or attach antennas. Guides and Scouts still learn how to tie knots and erect poles and an antenna would make a great project for them.

It is a good idea to have some preliminary meetings with the young people themselves. You can give them practice at using a microphone (or keyboard, if you offer packet as well). Have some questions (and answers) ready to start a conversation with both other Guides and Scouts and with other amateurs. Giggles are OK but words are better!!

The children can also learn about both Morse Code and the phonetic alphabet. They quite like to be able to spell their names phonetically. Some leaders like to have question forms for the children to fill in on the day. They may need help from you

in the preparation of useful and interesting questions.

On the day(s) you can have a great time. The bands are opening up all the time and amateurs are usually very happy to talk to your charges. You can be sure you will be well fed as the scouts and guides test their culinary skills on you!

When it is all over please let me know about it.

The ALARAMEET In Brisbane

The time is approaching when you need to be making your arrangements to be in Brisbane for October 2nd and 3rd (and a few days either side of those dates, if you can). All YLs are welcome though, be warned you could be given an application form to join, and the OMs are welcome, too. So why not contact Bev VK4NBC QTH/R the Callbook or by email: vk4bnc@bigpond.com.au.

There will be an informal evening meal on the Friday, a fully arranged program for the Saturday and Sunday with optional expeditions on the Monday and Tuesday. We realised that when people travel thousands of miles to participate in an ALARAMEET they want to see as much as possible of the host city. Bev has arranged tours for Saturday afternoon and Sunday, but allowed enough time together for us to meet each other again (or for the first time) face to face. The Monday and Tuesday activities are for those lucky enough not to have to leave immediately after the meet.

Do contact Bev for more information and if you have indicated that you will be there she would appreciate it if you could send the registration fee beforehand so she can pay for deposits etc.

Everyone who has been to an ALARAMEET has enjoyed themselves and been made to feel welcome. I am sure you will as well.

ALARA Contest

Don't forget the ALARA Contest comes up in November. Watch for the details either in AR or in the ALARA Newsletter and keep the second weekend in November free.

If you participate in JOTA, why not

arrange for the same group to participate in the ALARA Contest as a club station. There is a special category for club stations but we need some more clubs to participate.

Of course, it doesn't have to be a Guide or Scout Group club station, if you have a club call sign for your radio group why not give your members some contesting experience. The ALARA Contest is not a rush - rush - rush type contest, people always have time to chat, though we do exchange numbers. Why not give it a go?

Future Reminder

It you are thinking ahead to next year's holiday plans, what could be better than to go to New Zealand in September/October. While you are there you could participate in the YL2000 Meet on Sept 30th/Oct 1st 2000 in Hamilton. Contact Biny ZL2AZY QTH/R or by email on yl2000@iname.com.au.

DX SK

We received a sad packet message from South Africa recently, to say that Iris ZS2AA has become a silent key at 95 years of age.

Until just a week before her death Iris had been on the air. She was the first woman to qualify as an amateur in South Africa, in 1937. She was a foundation member and first President of the South African Women's Radio Club, which in its heyday had over 120 members.

In 1980, when she visited the US Iris was the houseguest of radio amateurs in every place she visited. She was also a very active member of WACRAL, the World Association of Christian Radio Amateurs and Listeners.

She was made an Honorary Life member of the SARL in March 1994 and gave the keynote speech at the AGM of the SARL.

As well as her interest in amateur radio Iris was a keen gardener and cook. She even made her own cake for her 90th birthday party that was attended by family and friends from many countries.

A quote from the packet message says: "Iris ZS2AA was somewhat of a legend in her lifetime in the amateur world - a person whose friendliness left a lasting impression on her, an exceptional person whose cheery voice, keen sense of humour and zest for life will be sadly missed by countless ham radio friends worldwide."

I am sure this sentiment will be echoed by all that knew her.

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Where did you go portable in this year's John Moyle?
Tell us about it.

1999 Remembrance Day Contest

14/15 August 0800z Sat - 0759z Sun
Presented by Alek Petkovic VK6APK

This contest commemorates the amateurs who died during WWII and is designed to encourage friendly participation and help improve the operating skills of participants. It is held close to 15 August, the date when hostilities ceased in the south-west Pacific area.

It is preceded by a short opening address by a notable personality transmitted on various WIA frequencies during the 15 minutes prior to the contest. During this ceremony, a roll call of amateurs who paid the supreme sacrifice is read.

A perpetual trophy is awarded annually to the WIA Division with the best performance. The name of the winning Division is inscribed on the trophy, and that Division then holds the trophy for 12 months. The Division also is given a certificate, as are leading entrants.

Objective: Amateurs in each VK call area will endeavour to contact amateurs in other VK call areas, ZL and P2 on bands 1.8 - 30 MHz (no WARC). On 50 MHz and above amateurs may also contact other amateurs in their own call area.

Contest Period: 0800z Saturday, 14th August to 0759z Sunday, 15th August, 1999. As a mark of respect, stations are asked to observe 15 minutes' silence prior to the start of the contest, during which the opening ceremony will be broadcast.

Rules:

- Categories:
 - High Frequency for operation on bands below 50 MHz;
 - Very High Frequency for operation on and above 50 MHz;
 - Single Operator;
 - Multi-operator.
- Within each Category the Sections are:
 - Transmitting Phone (AM, FM, SSB, TV);
 - Transmitting CW (CW, RTTY, Amtor, Factor, packet, etc);
 - Transmitting Open (a) & (b);
 - Receiving (a), (b) or (c).
- All amateurs in Australia, Papua New Guinea and New Zealand may enter the contest, whether their stations are

fixed, portable or mobile.

- Cross-band and cross-mode contacts are not permitted.
- Call "CQ RD", "CQ CONTEST" or "CQ TEST".
- On bands up to 30 MHz stations may be contacted once per band using each mode, ie twice per band using CW and Phone.
- On 50 MHz and above, the same station in any call area may be worked using any of the modes listed at intervals of not less than two hours since the previous contact on that band and mode.
- Both single and multi-operator entries are permitted. To be eligible as a single operator, one person must perform all operating and logging activities without assistance of any type, personal or electronic, using his or her own callsign. More than one person can use the same station and remain a single operator providing that each uses his or her own callsign, submits a separate log under that callsign and does not receive operating or logging assistance in any way during the contest.
- Multi-operator stations are only allowed one transmitter per band/mode at any one time. Simultaneous transmissions on different bands are permitted. Simultaneous transmissions on the same band but different modes are permitted.
- For a contact to be valid, numbers must be exchanged between stations making the contact. Exchange RS(T) followed by three figures commencing at 001 and incrementing by one for each successive contact.
- Contacts via repeater (including satellite) are not permitted for scoring purposes. Contacts may be arranged

through a repeater. Operation on repeater frequencies in simplex is not permitted.

- Score: on 160 m two points per completed valid contact; on all other bands one point; on CW double points.
- Logs should be in the format shown below and accompanied by a Summary Sheet showing callsign; name; address; category; section; for multi-operator stations a list of the operators; total score; declaration: *I hereby certify that I have operated in accordance with the rules and spirit of the contest*; signed; date.
- Entrants operating on both HF and VHF are requested to submit separate logs and summary sheets for both areas.
- VK entrants temporarily operating outside their allocated call area, including those outside continental Australia as defined for DXCC, can elect to have their points credited to their home Division by making a statement to that effect on their summary sheet(s).
- Send logs and summary sheets to: RD Contest Co-ordinator, A Petkovic VK6APK, 26 Freeman Way, Marmion, WA 6020, by Friday 17 September, 1999. Endorse envelope "Remembrance Day Contest" on front outside. Late entries will not be eligible.
- Certificates will be awarded to the leading entrants in each section, both single and multi-operator; in each Division; P2 and ZL. Entrants must make at least 10 contacts to be eligible for awards, unless otherwise decided by the Contest Manager.
- Any station observed as departing from the generally accepted codes of operating ethics may be disqualified.

Determination of Winning Division:

Unless otherwise elected by the entrant concerned, the scores of VK0 stations will be credited to VK7, and the scores of VK9 to the mainland call area which is geographically closest. Scores of P2, ZL and SWL stations will not be included in these calculations.

For each Division, an "improvement factor" will be calculated as follows:

- For transmitting logs only, HF and VHF "Benchmarks" for each Division will be established, against which its performance for the current year is judged. The same formula will be used

for HF and VHF, inserting the appropriate figures:

$$B = 0.25P + 0.75L$$

where B = this year's benchmark, P = last year's total points, and L = last year's benchmark.

- (b) For each Division, HF and VHF Improvement Factors will then be calculated. Once again the same formula will be used for both HF and VHF, inserting appropriate figures:

$I/F = \text{Total points (this year)} / \text{Benchmark}$
where I/F = improvement factor.

- (c) For each Division, the HF and VHF Improvement Factors will then be averaged:

$$\text{Overall } I/F = (HF \text{ I/F} + VHF \text{ I/F}) / 2.$$

- (d) The Division which achieves the highest overall improvement factor will be declared the winner.

Receiving Section Rules

1. This section is open to all SWLs in Australia, Papua New Guinea and New Zealand. No active transmitting station may enter this section.
2. Rules are the same as for the Transmitting Section.
3. Only completed contacts may be logged, ie it is not permissible to log a station calling CQ.
4. The log should be in the format shown right.

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Example Summary Sheet Remembrance Day Contest 1999

Callsign: VK3DID
Name: Ian Godsil
Address: 57 Nepean Highway, Aspendale, 3195
Category: HF
Section: Transmitting CW
Total Score: 1000
Declaration: *I hereby certify that I have operated in accordance with the rules and spirit of the Contest.*
Signed: Ian Godsil
Date: 30 August 1999

Example Transmitting Log Remembrance Day Contest 1999

Callsign:	VK1XXX							
Category:	HF							
Section:	Transmitting Phone							
Time (UTC)	Band	Mode	Call	Nr Sent	Nr Rcvd	Pts		
0801	14	SSB	VK2QQ	58001	59002	1		
0802	14	SSB	VK6LL	59002	59001	1		
0806	14	SSB	VK5ANW 59003	59001	1			
0808	14	SSB	ZL2AGQ 56004	57004	1			
0811	14	SSB	VK4XX	59005	59008	1		

Example Receiving Log

Name/SWL Nr:	L33071							
Category:	HF							
Section:	Receiving Phone							
Time (UTC)	Band	Mode	Calling	Calling	Nr	Nr	Pts	
0801	14	SSB	VK1XXX	VK2QQ	58001	59002	1	
0802	14	SSB	VK1XXX	VK6LL	59002	59001	1	
0806	14	SSB	VK5ANW	VK1XXX	59001	59003	1	
0809	14	SSB	VK7AL	VK2PS	59007	58010	1	

On VIDEO

"AN EVENING WITH ANDY THOMAS VK5MIR"

A video which shows the presentation evening with Andy Thomas, South Australia's own Astronaut, will be available to Amateur Radio Clubs under the following conditions:-

Radio Clubs and WIA Divisions will be able to obtain a copy of the video for the production cost and cost of tape, packing and postage. This is made up as follows:-

Provision of video -	\$15
Mailing Pack -	\$ 1.15
Postage (within Australia) -	\$ 3.20

TOTAL \$19.35

If Registered Mail is desired an additional amount of \$1.80 will be required. The tapes will be reproduced on professional equipment but on a non-profit basis.

The video shows details of various presentations made to Andy Thomas in connection with his contacts with South Australian Amateur Radio operators, and other interaction with the South Australian community, whilst he was operating as VK5MIR from the Russian 'MIR' Space Station.

It also includes a description of various aspects of Andy's mission on MIR, including his flight to and from the Space Station.

Andy's description included a 'voice over' presentation of his 'flight video' followed by a very interesting question and answer session.

The presentation of the Civic Award of the City of West Torrens to Andy, by Dr Reece Jennings, the acting Mayor of the city is included. This is the highest award the city can present.

The 'flight tape' portion of the presentation will only be included in the video if NASA permission has been obtained to allow its use. This permission is currently awaited.

Radio Clubs wishing to have a copy of the video should submit their request by NO LATER than 18 SEPTEMBER and provide a cheque or money order to the value shown above made out to Ian J. Hunt.

Orders for the tape are to be addressed to Ian J. Hunt, 8 Dexter Drive, Salisbury East, South Australia 5109.

Unfortunately we cannot undertake to provide copies of the tape for individuals. It may be possible for those who would like a personal copy of the presentation to come to some arrangement with their nearest Radio Club.

ARDF

3rd Region 3 ARDF Championships

Nonsan, Korea, 21st-28th June 1999

Jack Bramham VK3WWW
WIA Federal ARDF Co-Ordinator

Ask any travelling Amateur if they managed to involve amateur radio in their itinerary. The answer in most cases would be yes, either by obtaining a reciprocal license, meeting international amateur friends or just looking around the shops in the hunt for amateur related products.



Photos 1 & 2: Australian ARDF team members



AROUND MID JUNE, Adam VK3HDF, Bruce VK3TJN, Bryan VK3YNG, Jason VK4YOL and myself made last minute travel preparations for a trip to Nonsan in South Korea about 3 hours south of Seoul. Nonsan was the site of the 3rd Region 3 ARDF championships.

ARDF is also referred to as Foxhunting, Foxteering and Radio Sport, to name a few. During the wee hours of Sunday 20th June, two others left Melbourne with me en-route to Sydney where we would change planes and collect the third VK3 who had taken the opportunity to visit family in VK2. The only problem we encountered on the flight to Japan was the constant questioning referring to the ARDF 2m and 80m receivers that were appearing on the Xray screen. Once we explained that they were not explosive devices or hijack material we were allowed to proceed.

Early that Sunday evening we arrived at Narita Airport in Japan where we spent the night at the Nikko hotel and met up with the last member of our group who had arrived direct from Brisbane.

Now we travelled as a complete team each wearing the same screen-printed tops. Upon arrival at Seoul, we were greeted by members of the KARL (Korean Amateur Radio League), then transported by bus to the Konyang University in Nonsan. This was to be our home for the next week.

Tuesday was equipment test day and the opening ceremony. I was required to attend a Jury meeting that morning and missed the start of the receiver testing. When I emerged from the meeting I discovered that one particular version of 80m sniffer we intended to use would not tune down low enough to DF the 3.519MHz. We normally hunt much higher up the band. As it turned out the hunting frequency was to be slightly higher up the band and only a small modification to one receiver was required.

The opening ceremony followed and it was wonderful to see teams from Australia, Belgium, Bulgaria, China, Japan, Korea, Kazakhstan and Mongolia all lined up in their team colours.

After the opening ceremony I attended a reception put on by the Mayor of Nonsan while the others were entertained by traditional music, dancing and martial arts demonstrations. It seems that there was a play by the JARL team to slow some of the teams up as they hosted a banquet in the main dining hall with plenty of beer and wine. After a very hot day rain started to fall and I ventured off to bed not really thinking about the possibility of inclement weather.

Wednesday arrived, heavy rain falling. Breakfast was served between 06:00-07:00.



Photo 3 The 80m team members

You could feel the tension as competitors gathered to board the buses which would deliver us to the 2m event start location. This was quite an expensive bus ride as the start was located only 500m from our accommodation, I suppose it was either a ploy, or the organisers didn't want us getting too wet before time. Starting this event in the pouring rain was a nightmare, start groups consisted of 5 and it was difficult to hear your start number called over the rain that thundered down on the temporary awnings.

Personally I would say the 2m course was

easy, but those looking for the number 5 transmitter would disagree. The start sequence begins on number TX 1 as would be expected but the fact number TX 5 was very close to the start. By the time number TX 5 started transmitting competitors were well into the course. All the VK OM competitors fell for the trap and had to return later to punch number 5. With closer inspection of the course layout it was revealed that TX 5 was 250m closer to the start than it should be, later it was explained that the course setter had misinterpreted the rules.



Photo 4 Late nights play havoc!

Results for this event were in the OM section (18-40) 1st. Tarassov Nikolay UARK 39:21, 7th VK3TJN 1:08:21, 11th VK3YNG 1:13:25, 18th VK4YOL 1:24:50 (4 TX), 23 VK3HDF 1:47:02 (4 TX overtime). OT section (40-50) 1st. Alexandr Kochergin UARK 36:46, 8th VK3WWW 51:12. Kazakhstan is not in region 3 therefore placings in the OM section for region 3 are: 5th VK3TJN, 9th VK3YNG, 15th VK4YOL. In the OT section: 7th VK3WWW. Team positions for this event saw WIA OM team in 6th place, as there was only one competitor in the OT section, WIA OT team has no result.

It was very obvious that after the 2m event the tension between competitors was breaking down and there were groups of all nationalities discussing the day's events.

Thursday was a rest day, after breakfast competitors were loaded onto buses and shown some of the historical sights of the local area followed by some tourist shopping.

Friday morning, competition day again. This time we went on a real bus ride. After about 20 minutes we arrived at what looked like a commercial market garden, quite steep hills and very dense vegetation. The organisers had done an excellent job in setting up the start area to conform to International ARDF Rules. Weather conditions for this event were hot and humid, so most of the competitors were quite happy to rest in the shade before their start time. The 80m receiver is small compared to the 2m receiver and Yagi, and the bearings are more accurate.

I prefer 80m, rather than lumping around a Yagi, and many others agree. As it turned out wrestling a 2m Yagi through some of this dense jungle would have been very frustrating. Even so the WIA team suffered some equipment damage on this event. After finding two transmitters Bruce VK3TJN fell and his 80m loop became deformed, destroying the excellent uni-directional pattern he was used to. Jason VK4YOL also fell before he found any transmitters. His fall was more devastating as the receiver just died. Final results for this event were: OM open section 1st Qiang Ning 39:35, 9th VK3HDF 1:05:31 (5 TX), 15th VK3TJN 1:24:23 (5TX), 16th VK3YNG 1:34:58 (5TX), 19th VK4YOL 1:24:52 (0TX). In the OT section: 1st Alexandr Kochergin 41:07 (4TX), 10th VK3WWW 1:11:45 (4TX) In Region 3 OM section: 8th VK3HDF, 13th VK3TJN, 14th VK3YNG, 19th VK4YOL. OT section: 8th VK3WWW.

Team results for the OM section saw WIA take 5th place. Again there was only one competitor in the OT section so there is no

team result. Following the 80m hunt we all returned to the University and prepared for the closing ceremony and presentation dinner, where on behalf of WIA Australia we presented Mr. Kook-Hyun Chung President of the KARL a "Time For DX" 24 hour clock.

After the 2nd Region 3 Competition, where we were slightly embarrassed, we made sure that there were plenty of Australiana gifts to hand out. The WIA team became very popular with those who attended the dinner. In closing I must congratulate the Organisers of the 3rd Region 3 ARDF Championships on a job well done. We all had a wonderful time and in 3 years time when the championships go to Mongolia we will attempt to bring home some medals. If we don't succeed, at least we know the trip will be a lot of fun and certainly a learning experience.

Jack Bramham VK3WWW
WIA Federal ARDF Co-Ordinator
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Photos 5 & 6: International Contestants

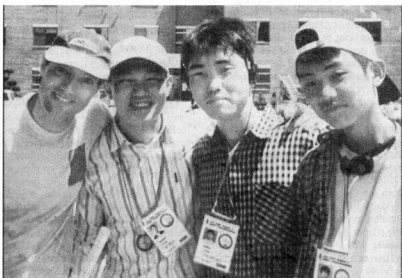


Photo 7 VK3TJN et al



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**HAVE YOU
HEARD...**

this week's
Divisional Broadcast?

See page 56 for times and frequencies.



Y2K:

It's Elementary, My Dear Watson

Alan Shawsmit VK4SS
35 Whynt St South Brisbane 4101
E-mail: ashawsmi@powerup.com.au

Take heed; an apocalypse cometh. The official countdown is on - only one hundred and ninety days as I write this. Is Planet Earth, ready? NO?

Electronically can Planet Earth be made ready come the 3rd millennium? NO?

No one and, I repeat 'no-one', can really know. So what can we expect?

The words of a USA Armed Forces PRO tells it best. To a group of Journo's he said, "come the moment of the 3rd millennium ie 2000AD, we will have modified (made compliant, if necessary), tested and re-tested the thousands of sophisticated systems of our forces. (There are over seven thousand intricate systems used by the USN alone) but not until midnight NY 2000AD will we know the truth".

As more and more conflicting info is spilled out from radio, print and TV media, it's only natural that confusion regarding this event will grow. So it's time to try to sort out the nitty-gritty facts from the inconsequential and gravy train trash.

First of all, there's no such thing as a Y2K or 3rd millennium 'bug' or 'virus' in the sense that at midnight NY 2000AD some acutely destructive 'virus' (like sudden severe flu) will appear and reduce micro-chip and semi conductor equipment to useless pieces of inanimate junk.

The approaching apocalypse will be caused by apparatus failure to keep pace with time ie our calendar for the 3rd millennium (first produced by Pope Gregory, 1580). We have been born, lived and will die by it. The average computer is as much a part of the Gregorian calendar as we are. It is created (built), provides service and ceases to function fully on the same time scale, in this case the first nanosecond of Y2K.

Detailed info on the Y2K computer problem and its worldwide effect is a subject too long to deal with here. So I suggest to those who can, that they obtain the 16 page brochure titled YEAR 2000 MISCONCEPTIONS AND OPTIONS from the Queensland State Government. Marketing Division, Department of State Development, Queensland. (It's free to all). (Other states may have something similar. -Ed)

Here is a sample of what the brochure provides:

The Year 2000 Problem (or millennium

bug) arises from use of electronic equipment and computerised systems that need to know the date in order to operate, and store or use those year dates as two digits (eg.00) rather than four digits (eg.1900,2000).

The millennium bug may also affect millions of embedded semiconductor chips from toasters to air navigation equipment.

As the year 2000 arrives many computerised systems may respond as if it was 1900 again. This may expose users to the risks of system failures, possibly catastrophic. It's not that there is a problem with working at 1900 but calculations by the embedded chips will come up with unexpected negative numbers.

The issues concerning the Year 2000 are urgent and far reaching with the global costs of correcting the problem estimated at \$900 billion worldwide. The cost to Australian business and industry could be about \$20 billion.

The list of affected items includes:

- Mainframe Computing Environments
- Midrange Computers
- PCs and Desktop Environments
- Software
- Telecommunications
- Emergency Services
- Fire Alarms, Warning Systems
- Airconditioning
- PABX, Voice Recording, Machines
- Surveillance, Security, Lift Controls
- Date/Time Machine Stamps
- Radio Control Systems
- Some Video and Audio Equipment
- Hospital Equipment
- Photocopiers
- Power Supply

Here is a quote from an internationally respected professional - Edward Yardeni, Chief Economist Deutsche Morgan Grenfell.

"The Year 2000 problem is a very serious threat... it could disrupt the entire global economy. I believe there is a 40% risk of a

world wide recession that will last at least 12 months starting in January 2000."

(November 1997)

A four-page insert comes with the Queensland Government brochure. Make sure you ask for it.

Alongside my computer is a fast growing stack of news clips, E-mails, magazine cutouts and my own personal notes. To my perception, about 10-20% of it has merit; another 20% could stand a second perusal and the rightful place of the remaining 60% is in the bin!

To me the main surprise of the pile is the proportion of material devoted to proving the year of the birth of Jesus Christ, as if in some way this is going to change the time scale function of the Y2K problem.

As an example of this, let me relate a short telephone conversation with a young lady: "I'm confused. Yesterday I bought a Windows 95 Computer. Full warranty, and after sales service. This morning as I was about to complete the sale and arrange delivery my next door neighbour tells me to have nothing to do with it. He says that the 3rd millennium doesn't happen until 2001AD and after that my Windows 95 will be useless. Is he right?" My reply, "Can you imagine your neighbour doesn't exist?" "I can try". "Try hard, and go get your computer right now. Just be sure about the Warranty and after sales service and that it's compliant and the best of luck to you." It was that two-minute phone call that caused me to put fingers to my keyboard. Imagine the confusion that misinformation like that will cause if spread daily through the lay community by someone who calls himself a computer "buff".

Why are the 2001AD cultists so persistently pedantic when the world's best brains claim they don't know what will happen?

I sought comments from four of the best theologians: Catholic (Roman); Anglican; Islam (Moslem); Judaism (Jewish) and asked exactly the same question of each. "Assuming our present calendar is incorrect, can you tell me the actual year of the birth of Jesus Christ."

- (1) Catholic: "Vatican and Middle East scholars would most likely say the year 4 BC. This is the official Vatican line, minus any dogma."
- (2) Anglican: "Our theologians would probably say sometime between 6BC and 4BC but they add that there's no positive proof."
- (3) Moslem: "Our calendar says we are in the year 1419. As you know it is Arabic calculated from the year our prophet Mohammed moved from Mecca to Medina at the age of 53."

Our calendar is calculated by the lunar months. It is a mistake to assume that there is no 0 in our numeracy. Arabic uses a dot and this dot is calculated as zero."

- (4) Judaism: "Jesus Christ plays no part in our history so I cannot help you. According to our calendar we are presently living in the year 5759." (Since the presumed beginning of our world -Ed)

That was it, not one mention of 2001AD. I had already tried astronomy by calling up Tidbinbilla, Mt Stromlo, Queensland University and the Brisbane Planetarium. No one trusts the accuracy of the Gregorian calendar as far back as 2000 years.

The article by Chris, VK6KCH in 'AR', January 1999, paints a pretty good picture of the most possible scenario, but omits that law and order may also fail.

I believe the Y2K 'shudder' will fall between bureaucratic deception and 'gravity-train' doomsday hype.

Finally, here are a few international news releases to mull over. Mostly taken from worldwide Radio Broadcast services.

Canada; March '99. "In the event of post Y2K problems we suggest a four week stockpile of essentials be stored."

Japan; "As at 20.3.99 Japan intends to temporarily abort part of its space program so as to protect certain sensitive systems against Y2K malfunction."

Russia informs the world that US\$500,000 (1/2 million) will be set aside for Y2K complacency. World reaction: What do they use for computers, cardboard cutouts? (Boris Yeltsin has now been better briefed and boosted the ante to \$7m that many feel is still a joke.)

From the local scene here in VK. The NAB has issued an early notice. No holidays for any employee over the Y2K New Year weekend. All must be on hand plus technicians just in case. This Bank and all finance houses throughout the world must be fairly certain that there will be 'glitches'. Singapore is the latest. Remember the almighty dollar is sacrosanct. Human values are expendable.

"The Jesus Freaks" - religious extremists, will assemble on an island off Gisborne, New Zealand. Theirs will be the first eyes to greet the first sunrise (if it's not raining) of Y2K. Will it be with hope or dread? There's sure to be a Ham with them broadcasting the scene. They believe in the Biblical Book of Revelations. Chapter 20 Verse 1-7 a millennium of peace awaits us all. At the site of Jesus Christ's cross another cult intend to mess immolate - commit suicide. The Jerusalem fathers can hardly wait.

India: Some provinces on the sub-

continent began the 3rd millennium, one-year celebration last March. Nothing like 'fun and games' early, just in case. (Now there's trust for you).

Hackers: Professional "System busters". The Hong Kong Blondes (?) and the Millworm Group have a Y2K plan ready. (That can only mean trouble).

Nostradamus: The Prince of all prophets says, "The end of the world will occur October 1999"; this means you are reading your last 'AR' magazine. Wait, before you start dismantling the rig and thumbing through your favourite papers, take note, this man who took 1000 predictions 400 years into the future, made his calculations using the Julian Calendar not the Gregorian, so we can expect the dates to be a little bit out.

You will have by now asked yourself what have some of the above "newsgrabs" to do with Ham Radio post Y2K. Some very little, others everything, but expect the subject via the media to snowball until the last moment of 1999.

It's now the 3rd millennium, we have survived the worst. It's back to the enjoyment of AR and maybe a new log book full of empty pages. The first entries?

Be prepared January through April. Severe Solar Storms predicted, capable of much destruction, satellites, city grids and other gear.

Computer Runs (simulated) declare an "impact winter" long overdue. Earth volcanic explosions of massive size.

Meteor impact. Right now there's a big one (almost 2km across) roughly on course. Could pass as close as 50,000km. That will more than rustle the trees on planet earth.

Arthur C. Clarke quits his predictions at 2100AD with the words "Now history will begin"? (What does he mean?)

Still confused? OK. Study these facts about our calendar and you'll understand why man and computer are tied together as they are.

I found this next piece on the back of a calendar, from Allen Calendars.

Some History And Facts About The Calendar (Ref1)

The calendar ... evolved from a Roman calendar established by Romulus, consisting of a year of 304 days divided into 10 months, commencing with March. This was modified by Numa, who added two extra months, January and February, making the year consist of 12 months of 30 and 29 days alternatively plus one extra day and thus a year of 355 days. This calendar required the use of an intercalary month of 22 or 23 days in alternate years. In the year 46 BC Julius Caesar asked for the help of the Greek astronomer Sosigenes as he had found that the calendar had fallen into some

confusion. This led to the adoption of the Julian calendar in 45BC (in fact the year 46 BC was made to consist of 445 days to adjust for earlier faults and is known as "The Year of Confusion").

In the Christian system the years are distinguished by numbers before or after the incarnation of Christ.

Denoted by the letters BC (Before Christ) and AD (Anno Domini). The starting point taken from the Jewish calendar year 3761 AM (Annis Mundi) and the 753rd year from the foundation of Rome. This system was said to have been introduced into England by St. Augustine about AD 596. It was ordered to be used by the bishops at the Council of Chelsea in AD 816.

In the Julian calendar all centennial years were leap years (ie the years AD 1200, 1300, 1400, etc.) and for this reason towards the end of the 16th century there was found to be a difference of 10 days between the Tropical and calendar years. This was corrected in 1582 when Pope Gregory ordained that October 5th should become October 15th, thus making the 10-day correction, and that only every fourth centennial year should be a leap year. This is known as the Gregorian calendar and is the one that we now use. It was adopted by Italy, France and Portugal in 1582 and other countries made the correction at various dates up to as late as 1923. The change from the Julian to the Gregorian calendar did not take place in Great Britain and her dominions until 1752, when the correction was made by the omission of eleven days, Wednesday, September 2nd, being immediately followed by Thursday, September 14th.

The Julian and Gregorian calendars are also sometimes referred to as the Old Style and New Style calendars. It is interesting to note that these terms originally applied to the date of the beginning of the year (New Year's Day). In the Old Style this was on the 25th March and was changed to the 1st January (New Style) in England at the time of changing from the Julian to the Gregorian calendar in 1752. New Year's Day was changed to January 1st in Scotland in 1600.

So there it is. Exactly as Holmes said to Watson. "Elementary"? Still confused? Be patient, time resolves all things.

73s 'que Dios le Bendiga'

PS I forgot to ask those theologians. "If the moment of the coming millennium is Jesus Christ's birth, why do we hold it on 25th December?"

Ref:

Allen Calendars, locked bag 326 Kingsgrove NSW 2208 (02) 9740 9744

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VK5s go to Dayton Hamvention '99 - USA

By Grant Willis, VK5ZWI
WIA Federal IARU Liaison Officer

On the morning of May 7th, Garry VK5ZK, Adrian VK5ZBR, Conrad VK5ZCK and myself, Grant VK5ZWI, boarded a QANTAS flight bound for the USA. (See photo 1). Our target was the Dayton Hamvention in Ohio, one of the largest Amateur Radio conventions in the world. Along the way, we toured several regions

of the United States, and Canada and met some interesting amateur radio operators.

After touring Colorado and Wyoming for the first week of our trip, we landed in Columbus, Ohio (about 70 miles from Dayton) on the Thursday afternoon. There we picked up a hire car and made our way up Interstate Route 70 (170) to Dayton. We

had pre-booked our accommodation at the beginning of January, and it was a wise move. Some people were staying as much as 50 miles outside of Dayton, just to get a room. Attendances at this event range between 30,000 to 40,000!

The Dayton Hamvention is a 3-day event, commencing on a Friday and concluding Sunday afternoon. A continuous talk-in net on the 146.94 repeater was available throughout the weekend, manned by operators from the Dayton Amateur Radio Association (DARA). Many useful navigation tips, as well as convention details and highlights were discussed on this net, and is a must for anyone attending. With the simplification of FCC requirements for foreign amateurs to operate in the USA, a 2m handheld becomes an almost essential travel companion. It is a credit to the

operators from DARA that the net ran so smoothly and efficiently.

There is so much to see and do at the convention it is difficult to know where to start. Getting to the convention venue is easy enough. Free parking and bus services were available from two of the local shopping malls. The entry tickets into the convention, which is held in the Hara Stadium complex, are US\$20.00 (see photo 2). These are valid for the full three days of the event. Your ticket automatically puts you in the draw for one of the many valuable door prizes. Door prizes at Dayton are not to be dismissed as they include 2m handhelds and other similar goodies. The major prizes included a Kenwood TS870S, Yaesu FT1000MP, Icom IC756 and other similar standard radios.

There are approximately 250 commercial exhibitors in the 5 main show halls, with around 1000 flea market stalls. Every major manufacturer of equipment even remotely related to Amateur Radio has a presence at Dayton. The big names are there, such as Icom, Kenwood, Yaesu, Alinco, MFJ, PacComm, as well as many smaller manufacturers, kit producers, component distributors and test equipment suppliers.

You would not have expected to see some of the companies that were there, including General Motors and Ford, as well as suppliers of weather stations! (It was interesting hearing several USA repeaters during our trip reporting local wind speed and temperature on the hour). There was also a plethora of computer, computer component and peripheral suppliers, servicing every corner of an amateur's interest.

The main arena was quite impressive (see photo 3).

The flea market is something to behold. (See photo 4). It is held outside in what is normally Hara Stadium's car park, covering the area of roughly 3 AFL football ovals. The range of items available on the second hand market in the USA is incredible. You could easily walk away with everything you needed to build a full linked repeater network or a complete ATV station.

If your interests were satellites you could have purchased the components for an Oscar capable satellite station. Computer and packet radio buffs could have obtained many of the base components for their computer networks. If your pet corner of the hobby is portable operation, then everything from antennas, coax, winch up portable towers to complete ex-army mobile communications vans were on sale! I have never been to a convention in Australia (including Gosford) that even comes close to the magnitude and scale of this event!

In addition to the trade displays and flea



Photo 1. "The Guys" - I-r Garry Herden VK5ZK, Conrad Knuepfer VK5ZCK, Grant Willis VK5ZWI, Adrian Waiblinger VK5ZBR assembled at Adelaide Airport prior to departure.

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Photo 2. "Entry Ticket" - This is a sample of the entry tickets at Dayton Hamvention.

An interesting alternate program is also run by DARA. Slanted more towards the non-licensed-YLs, it includes city and shopping tours of Dayton, cooking classes, landscaping tips, arts and crafts and beauty tip lectures and activities. So while the guys are in the halls looking at radios, the wives are out being entertained as well!

One of the behind the scenes results of holding the Dayton Hamvention is the ability for DARA to award college scholarships. These are awarded to students in the USA who hold an FCC amateur licence. It is great to see an event like Hamvention helping foster youth in amateur radio and education in this manner.

The Dayton Hamvention also offered me a chance to meet many of the people involved with IARU and ARRL. I had

discussions with Larry Price W4RA (IARU President), Dave Sumner K1ZZ (ARRL Executive Vice President) and Tom Atkins VE3CDM (IARU Region 2 Chairman). They were most useful and have no doubt helped in further strengthening contacts with the WIA, especially in the lead up to the IARU Region 3 Year 2000 conference in Darwin when these gentlemen will join us here in Australia.

Overall, the entire trip has been an amazing experience. There is nothing I can think of to compare the Dayton Hamvention with. I can thoroughly recommend, if you get the chance, making the journey half-way around the world to Dayton, Ohio in May to attend this hive of Amateur Radio activity. The dates for the 2000 Dayton Hamvention, for those who wish to put them in your diary

are, May 19th, 20th and 21st. The year 2000 will be a special event as the ARRL National Convention will also be held in conjunction with Dayton Hamvention.

On behalf of the VK5s who went to Dayton this year, we would like to say thanks to DARA for an excellent event. If you wish to find out more about the Dayton Hamvention, and have Internet access, try their web site at

<http://www.hamvention.org/>.

Grant Willis, VK5ZWI

P.S. The VK5's had many other adventures while in the USA and made contact with many other hams on 2m and 70cm. Thanks to all those who answered our portable calls and added that extra local dimension to our journey through 12 American states and one Canadian province in 4 weeks.

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Photo 3. "Hara Stadium" - This is one of the exhibitor show halls in the main basketball stadium within the Hara Stadium complex.



Photo 4. "Flea Market" - An aerial view of the flea market and convention halls. The cars you see parked are actually the flea market stalls.

An Attenuator Set for Receiver Sensitivity Measurements

Drew Diamond, VK3XU

45 Gatters Rd.,
Wonga Park, 3115

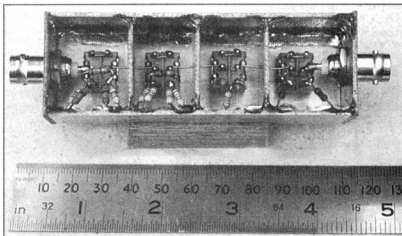


Photo 1

WHETHER WE ARE building, repairing or just checking a receiver, the ability to put an actual figure on the sensitivity is extremely useful. In HF work, the operator of a "laboratory" grade signal generator ("generator" from here on) should be able to reduce the level down to at least 0.1 microvolts, or about -127 dBm, which typically represents the smallest readable signal from an antenna in a quiet location. To obtain such a weak signal, the generator must be properly shielded, and be fitted with a well-made step attenuator of sufficient range.

We have been fortunate in recent years in being able to obtain, at reasonable cost, laboratory grade generators, made surplus by defence and communications bodies. A typical example is the Hewlett Packard model 606, and its cousins. These valve-driven "boat-anchors" represent some of the best-made instruments of their time, and do indeed qualify for the title of "signal generator". But for the amateur with limited bench space, they are very much in the too-big-too-heavy class. So, in the end, something like the Dick Smith's Q-1312 is purchased.

However, it is soon found that even on the low output setting, and with the

attenuator at minimum, the Q-1312's signal simply cannot be reduced sufficiently to permit a meaningful sensitivity measurement. Nor is there any metering of the output level.

Fortunately, the shielding of the Q-1312 is adequate to allow coaxial sensitivity measurements at HF. The maximum output (of my sample) is just over 1 mW, or 0 dBm in 50 ohms. By using the generator's -20 dB (low output) position and variable attenuator, an external level detector, and a 0 to 110 dB attenuator set, a signal level of less than 0.1 microvolt may be obtained.

An attenuator set may consist of a shielded box containing attenuations of 10, 20, 30 and 40 dB, giving 0 to 100 dB in 10 dB steps, and another box containing 1, 2, 3 and 4 dB giving 0 to 10 dB in 1 dB steps. The level may be adjusted to "0 dBm" or 1 mW into the 50 ohms attenuator set, with a simple "in-line" level detector that is connected at the generator's output. These three items will be described presently. We can now obtain a signal level from 0 to -110 dBm in 1 dB steps. The Q-1312's low output position gives us another -20 dB, thus a known level of -130 dBm may be obtained with confidence. In practice (perhaps surprisingly), the signal level using this set-

up is within 2 dB of that from a laboratory grade generator.

The same attenuator set will find use in other applications, such as; checking the accuracy/calibration of "S" meters, in fox hunting; to reduce the receiver's input signal by known amounts when closing in, and in gain/loss measurements upon amplifiers, antennas and other devices.

Construction

With careful work, the attenuator set should be quite accurate to 30 MHz, and reasonably accurate to at least 148 MHz. A cheap and effective shielded box for small items of test equipment is one made from double-sided printed circuit board. Thus, in this application, the "earthy" ends of the attenuation resistors may be soldered directly to the box wall with minimum lead length.

My box dimensions are 30 X 34 X 100 mm (HWD) for both attenuators. The 0-100 dB is shown in Photo 1. Dimension and mark out your sheet according to scrap-box availability, but try for a final box size similar to mine. If you have access to a sheet-metal guillotine; accurately cut your panels accordingly. If you must saw the panels; remember to allow for the width of the saw cuts as you go. Clean up rough edges with a smooth file.

Drill the holes for the connectors (type BNC is suggested for test equipment). Plan to solder the centre pin of the end connectors directly to the switch tag. When you are ready to start soldering the panels together, use some kind of right-angled device as a jig, such as a vee-block, as depicted in Photo 2. Apply small tacks of solder at first, then, when the box "looks right", form a continuous fillet of solder along the joins inside.

Carefully mark out on the front panel where the DPDT miniature toggle switches will be. Remember to aim for a direct solder connection of the connectors to the first and last switch tags (if this does not occur, it's no great trauma - a short wire connection will do). Only the 0 - 100 dB attenuator requires partitions between switches. Drill a small hole in these for the connecting wire. Remember to check the switch tag height for a bend-free connection through the partition. Solder in the attenuation resistors using the smallest practicable lead length.

The box for the in-line level detector measures 30 X 34 X 60 mm (HWD), and is made in a similar manner to that described above. The diodes and 10 nF monolithic capacitors should have leads as short as practicable. See Photo 3. Remember to heat-sink the diode lead(s) with long-nose pliers when soldering these parts.

Checking Receiver Sensitivity

A typical set-up for SSB/CW sensitivity measurements upon an experimental receiver is depicted in Photo 4. From the generator, the signal route is; coax cable, detector, 0-100 dB, 0-10 dB, coax, receiver. The receiver must have its covers on to prevent any direct pick up of the generator's signal (which is leaked mainly from the AF banana sockets on the front panel). The generator is set for unmodulated output. If your Q-1312 is like mine, you should have just over 1 mW/0 dBm output with the level pot at maximum. Table 1 (from the 1980 ARRL H'book) shows voltage levels and their corresponding dBm levels, referenced to 1 mW (0 dBm) in 50 ohms. Note how the minus dBm number increases as we go down in signal level. If your HF receiver can "hear" -130 dBm, then it should be sensitive enough for all practical purposes.

The simplest meaningful sensitivity number is probably the expression; "N microvolts for 10 dB signal plus noise, to noise". A typical figure might be 0.2 microvolts. To obtain this number, a measurement is first taken of the receiver's output with no signal present—just the noise that emerges from the headphone jack, or that which can be detected across the speaker's coil with the generator's output at zero. This is Noise reference level. Now the signal (whose frequency lies in the receiver's pass-band) is increased until the signal plus noise level indicated is 10 dB greater than reference level. The actual signal level is now determined by taking into account the amount of attenuation between generator and receiver.

If the generator's output is not metered (such as the Q-1312), we can measure the signal level with a simple in-line meter. Shown in the schematic is a voltage doubler diode detector which operates over HF. Experiments with various germanium diodes of types OA91, 92, 95 and 1N60 demonstrated that the output voltage obtained is remarkably repeatable. Which is just as well, for I'm going to ask you to accept that a 10 Mohm input DMM reading between (+) and (-) at the

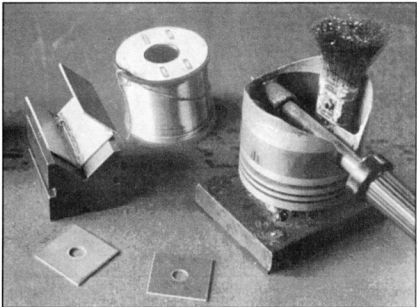


Photo 2

detector feedthrough terminals of 470 mVdc (0.47 V) corresponds to 220 mV/1 mW/0 dBm in 50 ohms. This is an arbitrary figure, because the diodes are not working in a region where their turn-on voltage can be ignored (ideal diodes would give us about $2 \times V \text{ peak} = 2 \times 1.4 \times .22 = 0.62 \text{ V}$).

Now, if the in-line level is set to 470 mV on our DMM (which corresponds to 0 dBm), and 110 dB worth of attenuation in inserted, then the signal at the receiver's input will be -110 dBm, or 0.7 microvolts, which should be plainly audible if the receiver is half decent. If the -20 dB low-

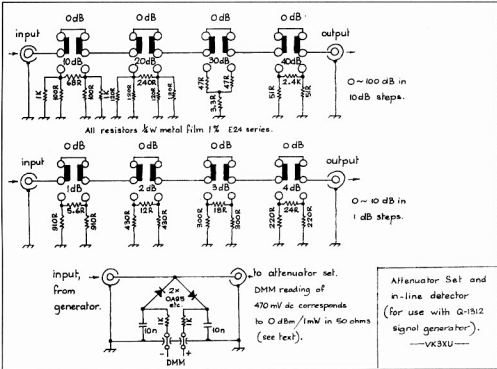


Figure 1

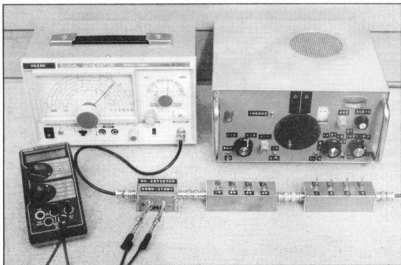


Photo 3

output position is now selected on the generator, the true level will drop to -130 dBm. A good receiver should "hear" this level.

To put a real figure on the sensitivity, an ac millivoltmeter with dB calibration is also required (which ideally should read true rms, but the error is small). Connect the meter to the receiver's AF output, or across the speaker coil. A typical range would be about 300 mV at comfortable loudness. Turn the generator's output pot down to

minimum (so that no signal is heard- just receiver noise). Adjust the receiver's AF gain to obtain a convenient reading of about 1/3 of full-scale (or the -10 dB calibration point on the milli-voltmeter's scale). This is our Noise reference. Set the generator to output 0 dBm as noted above. Switch in or out attenuation as necessary to obtain a signal-plus-noise reading 10 dB greater than Noise reference. Look up Table 1 to find the equivalent microvolt sensitivity. Sounds complicated, but with practice this method

becomes a powerful tool in receiver evaluation.

Parts

The miniature DPDT switches may be Dick Smith P/N DS 7656, or Jaycar ST-0552, or similar. 1000 pF (1 nF, or larger) feedthroughs are available from Electronics World (ph 03 9723 3860). These three can also supply the remaining components. If you have genuine difficulty in obtaining any of the parts, I always keep a few spares, so do please drop me a line at the address shown.

References and Further Reading:

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2. ARRL Handbook, 1980 (57th) Edition; pp 16.29-34.
3. "Measuring SSB/CW Receiver Sensitivity"; Sabin, W0IYH, QST Oct. '92.
4. Switched Attenuator in Ian Keyser's (G3ROO) column, Rad Com Mar '97.
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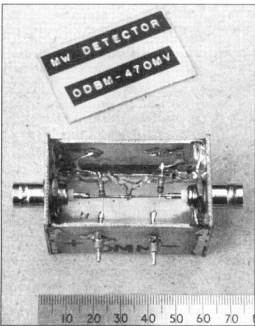


Photo 4

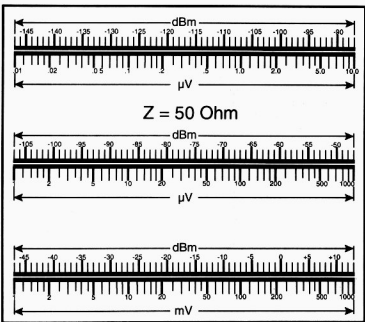


Figure 2

Equipment Review

ICOM IC-Q7A

By Paul McMahon VK3DIP.

What is it?

The IC-Q7A is a low cost dual-band (2 m and 70 m) handheld transceiver, offering about 350mW out on either band, and extended receiver coverage from 30-1300 MHz in FM, AM, and FM Wide, modes. The review set was supplied courtesy of ICOM (Australia) and had a serial number of 01064. The street price of an IC-Q7A is around \$340.

First Impressions

While this review is primarily on the ICOM IC-Q7A, I will be comparing the IC-Q7A to the Yaesu VX-1R a number of times. This is not a full comparison study, nor do I come out with any conclusion as to which is best, however I feel that there are quite a few Hams out there who would be interested in some of the contrasts. Besides, as ICOM don't supply a circuit or block diagram etc, now common practice, it gives me something of substance to talk about in this article.

The first thing that you notice about this set is how much it looks like a small "Transistor" BC band radio. Apart from the rubber ducky and the smallish LCD display the set looks (and feels) like many of the common small AM radios you see around. The second thing you notice (or at least I did as I unpacked the box) was that there is no plug pack charger. In fact the set uses two standard AA cells and while Ni-Cad cells and charger are available as an option there is no mechanism for charging them in situ, or powering the set externally for that matter. The two AA cells are probably in part responsible for the set's shape (58 by 86 by 27 mm) which as you can see from the photos makes the set look and feel a bit more square than the usual handheld form-factor. Having said that, while the set is a bit bigger than the Yaesu VX-1R, which it is obviously intended to compete with, it still fits at least in my hand reasonably well. The extra length of the standard antenna (180mm vs 110 mm) can come in very handy over marginal paths. Like the VX-1R the IC-Q7A uses an SMA style connector for the antenna which looks to be the new standard for small handhelds.

Apart from the set itself the package includes the antenna, a carry strap, a belt

clip, and the 40-page instruction book. There is no circuit and virtually no technical detail other than the specifications. There is not even a pin-out or description of the earphone/microphone socket which looks like a standard 3.5 mm type, but on closer inspection appears to be more like that of the Yaesu VX-1R (ie having three conductors plus earth, and being impossible to buy except as a special cable or adapter at great expense). This lack of detail led to a number of difficulties with testing this set.

Technical Bits

As mentioned above, the antenna connection is via an SMA-like connector, I call it SMA-like because it that appears in an effort to increase mechanical strength ICOM have opted for a connector that is somewhat longer than a standard connector. It will depend on what you want to do with the set whether this compromise is a good one or not. If you only ever intend to use either the antenna that came with the set or genuine ICOM accessories, then the increased mechanical strength will come in handy, especially if you opt for a larger antenna. If however you want to connect this set up to some home brew converter etc. then you may have to do a bit of hunting around to find a suitable SMA plug. In my case I was lucky to have two SMA to BNC patch cords each with a different brand of SMA connector. One worked, the other did not. This also, of course, does make interchanging of antennas from one brand to another more problematic, and I would caution anybody looking at buying a third party antenna to try it on the set first to ensure that it both makes reliable connection and looks OK.

There is no technical information, such

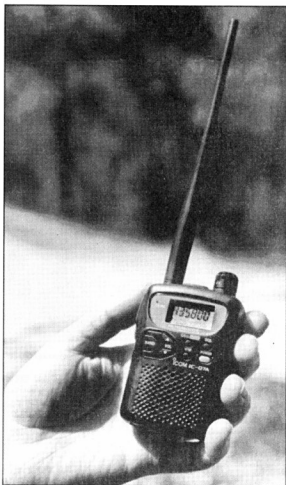


Photo 1. The diminutive handful

as circuit diagrams etc, provided with the set other than the standard specification page reproduced elsewhere in this article. Without some idea of which pin was which with the earphone and other connector, I didn't feel brave enough just to try it with a standard plug so actual measurements of S/N etc to verify the ICOM figures were not possible.

I was however able to verify that the set did cover the range continuously and that sensitivity at least from perceived audible quietening seemed on a par with that quoted in the specs. One thing I did notice however while doing this test was an anomaly in the S-meter. Despite appearing to be nine steps on the LCD S-Meter in fact there are only five. The first eight small blocks come on in pairs leading to a somewhat strange effect where your ears can be more effective at judging the relative strengths of similar signals than the S-Meter.

As a matter of interest, while again I could not do any absolute measurements, I did try to do some comparisons with the

IC-Q7A SPECIFICATIONS

GENERAL

Frequency Coverage:

Transmit:

VHF: 144-148 MHz

UHF: 430-440 MHz

Receive:

30 - 1309.995 MHz

(specifications guaranteed 30 - 1300 MHz)

Mode: FM, AM (receive only), WFM (receive only)

Number of memory channels: 200

Useable Temperature Range: -10°C to +60°C

Tuning steps (kHz): 5, 6.25, 10, 12.5, 15, 20, 25, 30, 50 and 100 kHz

Power supply requirement: 2 x AA(AA6) Ni-Cd or alkaline cells (negative ground)

Current Drain (VHF/UHF; at 3.0 V DC):

Tx (max. power): 440 mA/380 mA (typical)

Rx (rated audio): 170 mA (typical)

Rx (standby): 95 mA (typical)

Rx (power saved): 38 mA (typical)

Antenna connector: SMA (50 ohm)

Dimensions (projections not included): 58(W) x 86(H) x 27(D) mm

Weight: 170 g; 6 oz. (with antenna and battery)

MIC/SP connector: 4-conductor 3.5 (d) mm (.125 in); 2 k / 8 Ohms

Transmitter

Modulation system: Variable reactance

Output power (at 3.0 V DC):

VHF: 350 mW typ.

UHF: 300 mW typ.

Maximum frequency deviation: ± 5 kHz

Spurious emissions: Less than -40 dB

Receiver

Receive system: Triple conversion superheterodyne

Intermediate frequencies: 1st: 266.7 MHz;

2nd: 19.65 MHz; 3rd: 450 kHz

Sensitivity (except spurious points; typical values):

FM (at 12 dB SINAD)

30 - 117.995 MHz / 0.32 μ V

118 - 174.995 MHz / 0.16 μ V

175 - 246.995 MHz / 0.32 μ V

247 - 329.995 MHz / 0.32 μ V

330 - 379.995 MHz / 0.32 μ V

380 - 469.995 MHz / 0.32 μ V

470 - 749.995 MHz / 0.32 μ V

750 - 999.995 MHz / 0.32 μ V

1000 - 1199.995 MHz / 0.32 μ V

1200 - 1300.995 MHz / 0.32 μ V

WFM (at 12 dB SINAD)

76 - 108.0 MHz / 1.0 μ V

175 - 221.995 MHz / 1.0 μ V

470 - 770 MHz / 5.6 μ V

AM (at 12 dB SINAD)

118 - 136.0 MHz / 0.56 μ V

222 - 246.995 MHz / 0.79 μ V

247 - 329.995 MHz / 1.4 μ V

Squelch sensitivity:

0.18 μ V (144 - 148 MHz)

0.22 μ V (430 - 450 MHz)

Selectivity:

FM, AM More than 15 kHz / -6 dB, less than 30 kHz / -60 dB

WFM More than 150 kHz / -6 dB

Image rejection ratio: More than 60 dB

Audio output power (at 3.0 V): 100 mW (typ. at 10% distortion with an 8 Ohm load)



Photo 2. Icom left, Yaesu right

receiver in the VX-1R. While there was no real noticeable difference between performance within the Ham bands, to my ear, the IC-Q7A did seem to be noticeably more sensitive with a more uniform frequency response outside the Ham bands. This impression is reinforced by a look at the manufacturers specifications where on 2 metres the sensitivity for 12 dB SINAD is identical at 0.16 μ V, the VX-1R is a bit better at 70 cm, 0.18 μ V vs 0.32 μ V (or about a 5 dB difference), and outside the ham bands the IC-Q7A is claimed as more or less flat at 0.32 μ V while the VX-1R has spots where it needs 15.8 μ V (a 33 dB difference) for the same 12 dB SINAD. All of these figures are of course for the normal FM mode, FM wide and AM have similar though not identical relations.

TX power was measured, at least within the limitations of my power meter, and with a newish set of Alkaline Batteries, to be in line with the specifications of around 0.3 to 0.35 watts for UHF and VHF respectively. Again for contrast the VX-1R gives around 0.5 Watts on battery or about 1W when externally powered. The difference in antenna size probably goes most of the way towards closing this gap, so again in practice there is little difference. I would however like to have seen what effect on the output power the slightly lower volts of a pair of Ni-Cads (2.4V vs 3V) had. However I didn't have a set to hand and again there is no easy way to externally power the set.

Operation.

As can be seen from the photos the set has only a small number of controls, in fact there are only nine buttons and one knob, most of which perform more than one task. The multitasking of the buttons is fairly complex and I must admit I did find it difficult to remember which functions required which combinations of buttons to be held down. This is not helped by the set only having the prime role marked on the button and only memory or the manual to guide you to the other secondary or tertiary functions.

I also found the mix of methods used to access some of these functions a bit difficult. In some cases you have to hold the button down for greater than two seconds, in others you have to hold down the function button while pressing the feature button, and in yet others it is a combination of the two. Undoubtedly a regular user would quickly get used to this but I don't like the idea of having to press the function and feature button simultaneously. With the function key being a small button on the side of the set just below the PTT and the rest of the buttons on the front this means that, for example, to start the radio doing a simple scan (which requires pressing the function key and either the up or down volume button at the same time) requires the use of two hands, and an awkward positioning of the set to try to see both the side and the front of the set at the same time.

While many of the common features are accessed by the combination of button presses described above there are also a large number of actions that require using the set or menu mode. This is entered by pressing the VFO/Memory button for longer than two seconds. Once in set mode, rotating the dial knob steps through a number of options such as receive mode, tuning step, duplex/simplex, etc. When the required option is selected, the value can be set by holding down the function key while rotating the dial knob.

Apart from the above minor user interface irritants, the set worked fine on the air with quite reasonable TX reports on both 2m and 70cm. Received audio quality and volume were very good with quality on the FM broadcast band (using FM Wide of course) being equal to any (mono) commercial set I have heard. The basic functions of frequency and volume setting are straight forward, and the LCD display, though smallish, is clear and easy to read.

In terms of memories and other features the IC-Q7 has two banks with 100 memories each plus two call channels. These memories can save the frequency, mode, repeater offset, and tone settings, but do not have the option of setting an alphanumeric label. Normal scan options and a tone squelch pager type functions are also included.

As mentioned above, power for the set is via two AA cells which are fitted in a manner similar to most consumer portable devices these days (as can be seen from the photo). There is one small addition that is worth noting. One problem with the common form of sliding plastic battery cover is that over time the catches tend to wear and the cover can become useless. To try and prevent this ICOM have added a sort of plastic hinged clip-on latch to lock the cover in place.

This seems to work well when new but only time will tell how wear will affect this mechanism and I suspect you will ultimately end up with the same problem. This will of course be exacerbated if you choose to use Ni-Cads and thus have to be continually opening and closing the cover to swap them. The manual gives no guidelines for battery life other than current consumption and while I did manage to flatten one set of alkalines in use over a day, I didn't do it under the sort of controlled conditions that would allow any real conclusions to be drawn. About all I can say is that the current consumption figures would tend to suggest at least a couple of hours use out of a set of rechargeable Nicads.

The 40 page manual is on the whole well



Photo 3. The battery compartment

written and clearly explains the standard functions. I am a little worried by the fact however that there at least two things that I am aware of that are not even mentioned in the manual. For most amateurs these sorts of omissions would not be a problem, but if you are like me then having paid a reasonable sum of money for a new toy you like to know all the things it can do not just the common ones.

Just for the record I found two items by accident. The first is the little tune the set plays when the batteries are starting to get flat. I think this is just an audible warning. This is a good thing, but can be disconcerting when the manual doesn't even mention it. The second is that I can only assume that there is some sort of computer control of the set or downloading of memories available. A couple of third party vendors are advertising compatible software systems for the PC which as far as I can see must connect via the four way mic/ear plug in a similar manner to the VX-1R. If you have access to the internet then you can see an example of this at the RT-Systems pages at "http://www.rtsars.com/icq7_cloning_software.htm". Again there is no mention even of the possibility of doing something like this in the ICOM manual.

Conclusion.

While the IC-Q7A is obviously made as a low cost set with a couple of design compromises to achieve this, the excellent wide band receiver goes a long way towards

balancing this out. In terms of a comparison with the VX-1R and which would I recommend, I'm afraid I'll have to wimp out and say that it is a horses for courses thing. If you want something that you could sticktape to a beam for fox hunting then I would clearly go for the IC-Q7A. In other situations its not quite so clear cut and individual preferences would come in to play. On the whole however the IC-Q7A has quite a bit to offer at a price that we have not seen for quite some time. I can only hope other vendors follow suit.

73, Paul McMahon VK3DIP
ar



FOR ALL YOUR COMMUNICATIONS NEEDS

WeatherAlert Data Receiver

The ultimate weather forecast for boating around Sydney, Melbourne, Brisbane or Adelaide because it utilises the Department of Meteorology weather data via a VHF radio transmission! LCD screen displays the latest forecast and the unit beeps automatically when new forecasts have been received. The number of beeps vary according to updates, warning, or priority data received. Housed in a tough, yellow safety case it operates from just one 9V battery or rechargeable battery(optional). Includes flexible antenna plus full instructions.

D 3940

\$69⁹⁵
LIMITED STOCKS

BONUS 2 x mounting cradles (D 1941) valued at \$19.90

Revex W560N HF/VHF/UHF/SWR/PWR Meter

Quality Revex wide-band SWR meter, offering 2 in-built sensors for 1.8MHz to 525MHz coverage! Provides measurement of 3 power levels (3W, 20W, 200W) and SWR. Uses an N-type socket for the VHF/UHF sensor to ensure minimal loss. Measures 120 x 80 x 85mm.

D 1375

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Good performance and rugged construction make the 1m long '4 Wheeler' a great choice for 4WD vehicles where a longer antenna is not practical, either aesthetically or because you'll be driving in heavily timbered country. Includes an oversized braid over 1/2" fibreglass whip with polyolefin heatshrink coating, a heavy duty spring to damp out vehicle vibrations and a rugged base with SO-238 socket for easy coax connection.

D 4083

5 year warranty

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SAVE \$40

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The rugged 5BTV incorporates Hustler's exclusive trap design (25mm solid fibreglass formers, high tolerance trap covers and low loss windings) for accurate trap resonance with 1kW (PEP) power handling. Wide-band coverage is provided on the 10, 15, 20 and 40m bands (SWR typically 1.15:1 at resonance, <2:1 SWR at band edges) with 80kHz bandwidth typical on 80m at 2:1 SWR. An optional 30m resonator kit can be installed without affecting operation of other bands. High strength aluminium and a 4mm (wall thickness) extra heavy-duty base section guarantee optimum mechanical stability. At just 7.65m, the 5BTV can be ground mounted (with or without radials, although radials are recommended), or it can be mounted in an elevated position with radial system. Unlike other antenna designs, the 5BTV can be fed with any length of 50-ohm coax cable.

D 4920

HUSTLER

\$399
SAVE \$50

30m Resonator Kit

Adds 30m coverage to the 5BTV and includes all hardware.

D 4921 \$99.95



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DUE MID AUGUST

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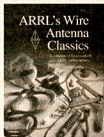
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GREAT VALUE!



Yaesu FT-100 HF/6m/2m/70cm Mobile

What amazing value! Now you can enjoy the fun of operating on all bands from 160m to 70cm, either at home or in your car. The new Yaesu FT-100 features HF/6m/2m/70cm transmitter coverage, with 100W PEP RF output on HF and 6m, 50W on 2m and 20W on 70cm, plus you can easily mount the detachable front panel using an optional lead for more convenient mobile installations. Powerful interference fighting features, such as a DSP based Bandpass filter, Notch filter and Noise reduction, together with an IF based Shift control, all aid reception quality during tough conditions. A speech processor and VOX are provided for SSB users and an internal electronic keyer is provided for CW operation. Also included are dual VFOs, built-in CTCSS encode, 300 memory channels, all-mode operation (SSB, CW, AM, FM, AFSK, Packet (1200/9600bps), 100kHz - 970MHz receiver (cellular locked-out) and options for additional AM and CW IF filters. The FT-100 is supplied with an MH-42B6J hand mic, DC power lead and comprehensive instructions.

D3285

2 year warranty

YSK-100 Separation Kit. D 3286 \$155



**STOCKS DUE
MID AUGUST**

YAESU \$2750

Yaesu FT-1000MP Deluxe HF All Mode Transceiver

Yaesu has created a new 100W HF masterpiece using proven design techniques and a major new technology to the amateur marketplace: Enhanced Digital Signal Processing (EDSP). Teamed up with Direct Digital Synthesis, an outstanding receiver section featuring a high intercept front-end and a variety of IF filters (including a Collins Helical Filter), the FT-1000MP's exclusive EDSP facilities provide an impressive array of IF-based noise-reduction and interference reduction filters for enhanced receiver performance. Yaesu's IF-based EDSP system provides 4 random noise-reduction protocols, audio enhancement with 4 equalisation programs for Tx and 3 for Rx, and an automatic notch filter which eliminates multiple interfering carriers. A comprehensive menu system allows you to easily hear the effect of various EDSP settings, so you can choose the best selection for your operating conditions. Front panel selectable EDSP filter contours also aid QRM rejection, providing improved signal-to-noise ratios and razor sharp selectivity. The FT-1000MP also features selectable receiver front-ends, an in-built AC power supply and auto antenna tuner, 2 main antenna sockets, selectable tuning steps as small as 0.625Hz, dual-mode noise blankers, 13.8V DC socket, 500Hz and 6kHz IF crystal filters, an RS-232 computer interface and an MH-31B8 hand microphone.

With so many features in this new transceiver, why not ask for a copy of the 12-page FT-1000MP colour brochure or 46-page technical overview for more detailed information.

D 3400

2 year warranty

YAESU \$4450



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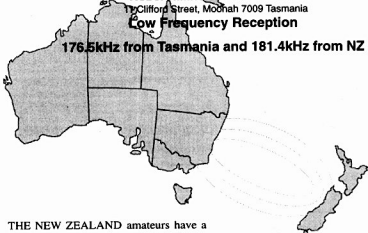
Try This

Robert Milne VK7ZAL/AX2TAR

11 Clifford Street, Moonah 7009 Tasmania

Low Frequency Reception

176.5kHz from Tasmania and 181.4kHz from NZ



THE NEW ZEALAND amateurs have a low frequency allocation on 165 - 190 kHz and are very keen low frequency operators.

To receive the signals there are some basic requirements. The avid listener needs to first find a fairly quiet location away from man made noise and interference.

That is, away from industrial areas and major power lines. Commutator noise, fluorescent lights and switch mode power supplies create the majority of problems.

The antenna needs to be several hundred metres of wire, the longer the better, about a metre above the ground laid end on, in the direction of the signal.

Keeping the antenna close to the ground reduces the effect of atmospheric noise. If the antenna is raised higher the signal strength will increase but so will the atmospheric noise.

To increase the signal strength, the better method would be to increase the length.

The last requirement is to use a pre-amplifier that can give gain and an effective

coupling to this antenna. The output can then be connected to a good quality low frequency receiver.

The circuit that I have developed provides good coupling and gain. The antenna is made to resonate by adjusting the variable capacitor for the maximum received signal strength.

The signal is applied to the source resistor of the FET, an MPF106, which provides low impedance and a high gain as does the next stage using a BC549.

The 0.1 uF capacitor, C2, provides some regeneration.

Construction is not critical at these frequencies but good general practices should be used and it should be powered by a clean supply. Battery power is quite suitable as the current draw is low.

Have a go at it, have some fun and send in some reports.

ar

SILENT KEY

Henry Lonsdale VK3DND passed away January 14th 1999. Loving husband to Muriel, father of Ann, Janet, Jon and Susan.

The WIA regrets to announce the recent passing of:-

DR RIGLAR VK3AFB
HV LONSDALE VK3DND
J F (John) ANDERSON VK3JA

News Release

CQ Communications, Inc.

25 Newbridge Rd.,
Hicksville, NY 11801.

CQ Editor Alan M. Dorhoffer, K2EEK, SK (Hicksville, New York) — Alan M. Dorhoffer, K2EEK, Editor of CQ magazine for nearly a quarter-century, died July 19 from complications of cancer surgery.

He was 61. Dorhoffer was born on February 23, 1938, and spent his entire professional life at CQ, starting as an Assistant Editor in 1964, and becoming the magazine's 10th Editor in 1976. He was also a co-owner of the magazine since 1979.

Dorhoffer lived in Port Washington, New York, and was a ham since his teenage years, concentrating his activity on his favorite band, 10 meters.

At CQ, Alan tried to focus on the "people" aspect of amateur radio. "Ham radio is people interacting with other people," he wrote in the magazine's 50th anniversary issue, and on the things people do with amateur radio. "The act of doing, whether it's contests or awards, that's been my outlook."

CQ Publisher Dick Ross, K2MGA, said Alan had been like a brother to him for over 42 years. "We'd butt heads from time to time on editorial matters, but that in no way diminished our mutual love and respect," Ross said, adding, "He was always there for everybody." Alan's illness was diagnosed only a week or so before he succumbed to it.

Alan was not married at the time of his death, and had no children; but he is survived by an "extended family" of over 1,000,000 close friends, the world's amateur radio operators.

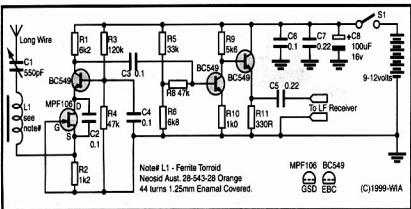


Fig 1. The LF Pre-amplifier circuit.

AR on the WEB

Alan Meredith VK2NNN

295 Iodide Street
Broken Hill
NSW 2880

ameredith@ozemail.com.au

WELCOME to what I hope becomes a regular column and one that I hope everyone will find interesting. Bob assures me that volunteering for things does not get you shot these days.... let's hope not. I hope over time that this column can tweak an interest in the Net from those of you that are a bit wary of it. At the same time it should, I hope, give some useful information to those of you, who like myself, spend way too much time on the Net.

"Needles in the Haystack"

The reason for my endless time online is the seemingly unlimited number of pages related to Amateur radio. Unfortunately the Internet's greatest strength is also its greatest weakness.

By that I mean that finding the information you need can sometimes feel like looking for the proverbial "needle in a haystack". There is help available though! You can use the Net standard way of searching by using a search engine such as AltaVista (<http://www.altavista.com>) or Yahoo (<http://www.yahoo.com>), but that "needle in the haystack" scenario comes back again! Luckily there are better ways of finding Amateur radio related sites. There are worldwide listings of pages, specifically related to Amateur radio, running into many thousands of sites. The best two that I have found are by K1DWU (over 4000 sites) at <http://www.k1dwu.net> (mirrored locally on my own site at: http://www.ozemail.com.au/~ameredith/Info/k1dwu_links.html) and K8SMC's listing of over 5000 sites at: <http://www.modempool.com/k8smc/>

Both of these sites are sorted into categories and alphabetised. Best of all is that they are tested regularly so that "dead" links are kept to a minimum! You'll find everything from Amplifiers to Microwaves to Weather sites amongst these listings.

Some individual Hams have huge sites that contain information about almost everything Amateur radio related and one of the biggest on the Net is Rod Dinkins AC6V, with over 88 pages!

<http://www.ac6v.com>

Webrings

Another way of finding Amateur radio related sites (or anything for that matter!) is to hop onto a Webring. A Webring is a listing of subject related pages that are "tied" together by a common link arrangement. You can go from site to site by just following the common link on each site. There is also a central listing, which describes all the sites in the ring. It's this description of each site that set the Webring apart from just another lists of links, as mentioned previously.

There are several major Webrings related to Amateur radio. The largest is the Amateur Radio Webring with over 1500 members!

There are many Webrings related specifically to Amateur radio and these can be found by visiting the home of the Webrings at <http://www.webring.org> and doing a search while you are there for "Amateur radio".

There are even "country specific" Webrings if you are looking for Ham information from somewhere special.

Australia has its own Webring! So far there are over 85 VKs who have joined the Australian Amateur Radio Webring (AAR).

Figure 1 and Figure 2 are samples of what you will find on every member's site (this is the common link that forms the ring) so keeping track of where you are, is easy. If you have a home page on the Net related to Amateur radio then consider joining the AAR. It makes finding Australian content

on the Internet a lot easier. The list is automated from the Webring central site, so once you join you just sit back and watch it grow. (The only person who has to do any work after that is the Webring Operator!) You will find the joining form at: <http://www.ozemail.com.au/~ameredith/webring2.html>

The purpose of the AAR Webring is to create a way of accessing Australian Amateur radio related pages on the Net without everyone having to list everyone that they know of on their own pages. This will ensure that everyone is linked to everyone else.... but without the hassle of "re-inventing the wheel". It will also ensure that everyone has the best list of links available on their own page at all times.

Whichever way you approach the Net there is no denying that it is an extremely powerful communications medium. Personally, being an avid Dxer/Contester, I find it hard to imagine how anybody found up to date information about what Dxpeditions, Contests etc were going on around the world before the Net came along (I can hear all the old-timers cringing now...Hi). Whatever your interest in Amateur radio is, there is sure to be something of interest on the Net for you.

Now I know that the sunspot activity is on the increase, but then again winter is biting at our heels also. So when you turn on your rig and find the bands are dead, try the Net to wile away the cold winter nights and see what's "out there" of interest.

You might be surprised!

If you find something cool while surfing around then let me know and let's share it with everyone. You can email me at: ameredith@ozemail.com.au or ICQ 13626731.

Talking about cool...while you are reading this month's AR the screensaver on your PC has probably kicked in so why not have one that is really cool! It's called Sun Clock and is well worth a look at: <http://www.sk3bg.se/contest/scrsaver.htm>

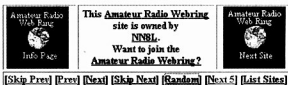


Fig 1

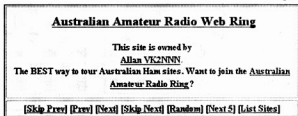


Fig 2

TECHNICAL ABSTRACTS

Gil Sones VK3AUI
30 Moore Street
Box Hill South Vic 3128

E-Field Meter

A meter to measure Electric Fields was described in RAD Com April 1999 by Dick Rollemma PA0SE. As the immunity of consumer electronic products to nearby electromagnetic sources, such as amateur radio transmitters, is defined in terms of the Electric Field strength in Europe, this is becoming increasingly necessary. The acceptable measurement is either 1 volt/metre or 3 volts/metre.

Whilst a loop type field strength meter will work in the far field, in the near field the relationship between the magnetic and electric fields is more complex. This makes it necessary to use a device that measures the electric field directly when close to the radiating device.

The meter is intended for use as a check on electric field strength for EMC work and for work on antennas.

The E-Field meter uses a short antenna instead of a loop. The voltage induced in a short antenna is independent of frequency provided the antenna is short with respect to the wavelength and the measuring circuit has a high input impedance so as not to load the antenna.

The antenna should be less than a tenth of a wavelength long. The equivalent circuit of a short dipole and the input capacitance and resistance of the E-meter is shown in Fig 1. Both the antenna and the input capacitances are in the order of a few pF.

The antenna capacity can be raised by using a short fat dipole and the input capacity and resistance should be

minimised by using a dual gate MOSFET.

The meter Dick PA0SE built was based on an earlier design by ZL2BBJ but Dick used a balanced rather than a single ended design. The circuit is shown in Fig 2. The two FET amplifier stages need to have the same gain and this was achieved by adjusting R9, R10, R11 and R12 to equalise the gain of the two FETs. Temporarily short inputs A and B, apply a signal and adjust the resistors for minimum meter reading.

The meter used by Dick gave a convenient 0 - 12 volt/metre scale and different meters will require adjustment of R18, R19, R20 and RV1 that were selected for the author's meter. A more sensitive meter movement could be shunted or the resistor values scaled to suit.

The detector diode D5 should be a germanium type and there is some non-linearity at the bottom end of the scale.

The antenna assembly is shown in Fig 3. The exact construction is not critical but remember that the aim is to maximise the

capacity of the dipole and to minimise the input capacity of the amplifier.

The calibration setup is shown in Fig 4. The RF source could be your transceiver. The author used two metal plates each 1 metre square spaced one metre apart. The plates were made by covering pieces of hardboard such as Masonite with cooking foil.

The spacing was maintained by four PVC (conduit) tubes holding the corners apart plus another placed between the centres of the plates. The whole setup was supported on a non-metallic garden table. The setup is used by providing RF drive to the plates and adjusting the drive for say 10 volts between the plates. This will give a field of 10 volts/metre.

The E-meter is placed in the middle between the plates and may then be calibrated. The digital meter in Fig 4 reads a peak voltage and so for 10 volts the meter should read 13.8 volts.

This is the peak voltage of 10 volts RMS less the 0.3 voltage drop across the germanium diode. You do not need much power and QRP is adequate. You should calibrate on 80 or 160 metres, as this will minimise disturbing effects such as from the connecting wires.

Dick PA0SE found that it was helpful to hold the meter away from his body by attaching a 45-cm long PVC pipe handle to the meter. The meter is a very high input impedance device and stray capacity may be troublesome.

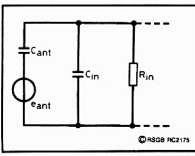


Fig 1. Equivalent Circuit of Short Dipole and E-meter input circuit

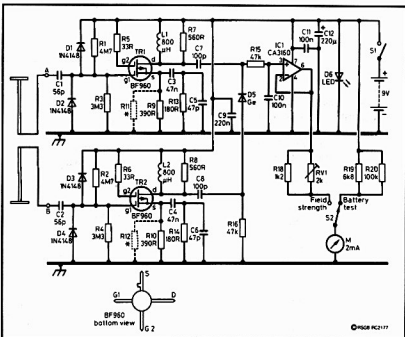


Fig 2. The circuit

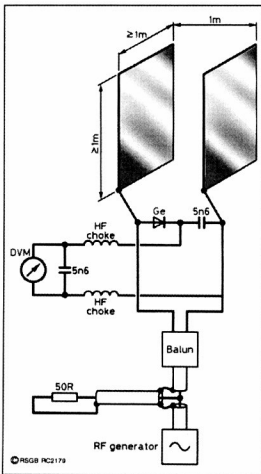
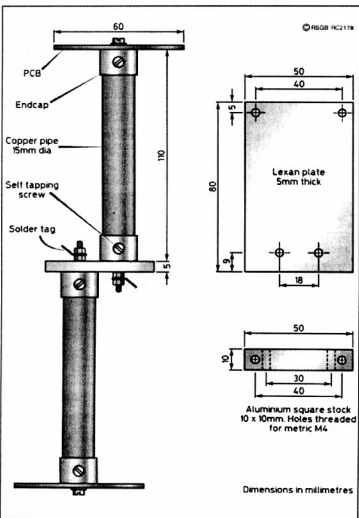


Fig 4. The calibration setup

Fig 3. The antenna assembly

Twin Band Antenna

Bert Veuskens PA0HMV described a twin band 144 MHz and 432 MHz vertical antenna in *Electron* April 1999.

The antenna was built into a radome made of PVC pipe. The antenna appears to be a half wave type on 144 MHz and a collinear on 432 MHz.

The antenna uses a ground plane that is cut for the 432 MHz band. The antenna is fed via a trimmer to a tap on a coil at the bottom of the radiator. The radiator has a slim folded resonator 83-mm long in the middle.

The antenna radiator and base coil is shown in fig 5. The base coil has $5\frac{1}{2}$ turns and the tap for the feed trimmer is one turn from the top.

This is shown in Fig 6. The resonator is shown in Fig 7. The size of the resonator is such that it will slip into the 32 mm PVC

pipe radome. The PVC pipe would probably be plastic conduit similar to that used by Telecom.

The radiator and coil assembly is attached to an N-type coaxial connector. Also connected to the flange of the connector are the four radials, each 173 mm long.

The radome and a bottom section of copper pipe are slotted to pass the radials and the whole assembly is held together with a hose clamp. The copper pipe, 160 mm long is used for the attachment to the mast clamp. This is shown in Fig 8 and Fig 9.

After an initial adjustment the feed trimmer which was a 10-pF type can be replaced with a capacitor fabricated from a scrap of RG58. See Fig 10 for this capacitor substitution.

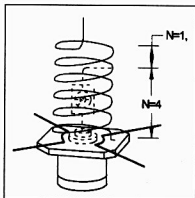


Fig 6. Base Coil with Trimmer and Tap

continued next page

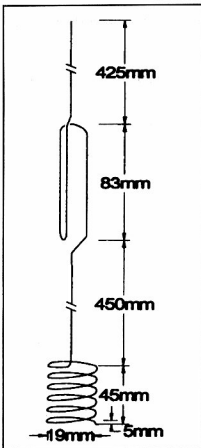


Fig 5. Antenna Radiator, Base Coil and Resonator Assembly

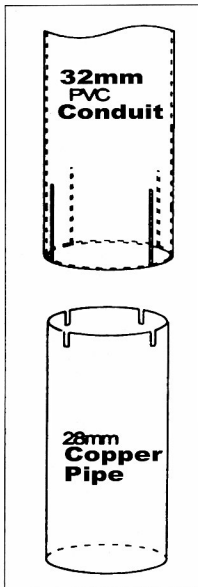


Fig 8. Mounting Pipe and Radome Junction

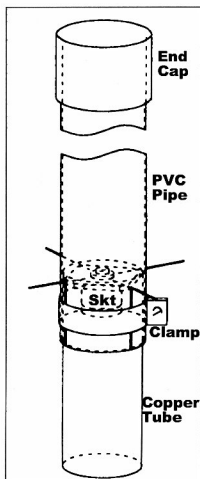


Fig 9. Mounting Junction with Clamp and Antenna Radials

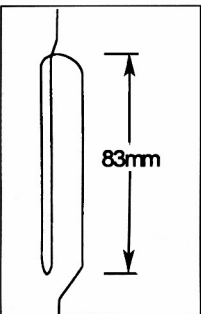


Fig 7. Resonator

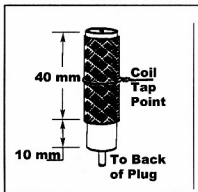


Fig 10. Substitute Feed Capacitor

Have you tried

DXing, microwaves, CW, high speed data, ATV, operating portable, slow scan TV, QRP, contesting, homebrewing, AM, UHF, packet radio, foxhunting, building repeaters, JOTA, 160 metres or publicising amateur radio?

Write about it and send it to Amateur Radio - the magazine which covers more facets of amateur radio than any other.

ar



AN EXPANDING WORLD

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All times are UTC

Beacon repairs

The Official Bulletin of The West Australian VHF Group Inc carries a report on the damage as a result of Cyclone Vance and subsequent repairs to the Exmouth beacons.

The report says: Don (VK6HK) has been repairing the beacons damaged by the recent cyclone that passed through Exmouth. This is best summed up in his own words.

"You may be interested in the results of repairs to the VK6RSX Exmouth beacon transmitters.

"The txs were delivered to this address per courtesy of Bill Snedden from Exmouth, on Friday 16th April. Bill had also been involved with Rex VK6ARW in installing the beacons in the first place.

"After being treated to Cyclone Vance, with extensive damage to the Exmouth Air Charter building where they were housed, falling off their shelf mounting and getting a good soaking, the txs arrived in surprisingly good condition - considering.

"The only visible damage was a couple of minor dents in the covers on one unit. These have been "panel beaten" out.

"Both were given a good clean out. There were some rust spots on the tinplate exciter cans in both units, but they have cleaned up AOK.

"At first the 50 MHz tx would not start, but that turned out to be a broken earth lead to the exciter card - probably a bad joint disturbed when cleaning and a "timebomb" fault that was not really connected to the cyclone.

"I also did a check on the spectrum analyzer and found a small spig in the 50 MHz PA, which retuning has corrected. So it looks as if it has not been a wasted exercise to give the units the once over anyway.

"In the power supply, a mounting pillar for the filter capacitor bank had broken away - possibly cyclone damage. A substitute anchor has been provided.

"That fixed, it sprang to life and generated about 45 watts out - much as original. So far

it has run for a couple of hours without fault.

"After cleanup the 144 MHz unit worked straight off on switch-on, generating 50 watts as original. This unit had a known fault in that the keyer had been running mysteriously fast at about 30 wpm. It turned out that there were two problems in the keyer. First, (blush) one connection to the clock timing capacitor had never been soldered. This fixed, all was well or was it? On applying heat or cold to the Cap, the speed still varied by more than double. Changing the mini "Monolithic Multilayer Ceramic" type blue 0.1µF cap for a trusty "Greencap Metalized Polyester" type of the same value fixed that problem. The carrier frequency was also found to be low and has been adjusted to 144.576. The tx has now run for a couple of hours in an ambient temp of about 30 degrees without fault.

"Is correction of these potentially fatal faults an example of "an ill wind etc..."?

"Both txs now even sport the correct label - "VK6RSX" instead of the originally proposed (but rejected by ACA) "VK6RXM" and look as good as new.

"Bill has volunteered to take the txs back to Exmouth when he returns in 2-3 weeks time, ready for re-installation when power is returned to the light aircraft strip site in about 8-12 weeks or so.

"Rex VK6ARW reports that the mast and two "U-dipole" antennas appear to have survived, although the vertical pipe support has twisted to the horizontal position on its "Tee piece" mount to the main mast. An antenna bridge test on the 2mX shows all is well with that antenna and cable. 50 MHz shows some problem, but that has been found to be in contact with the mast and will be checked again when the mount position is fixed.

"One feeder had its "N" connector torn off and that can be fixed. Rex says he "has the technology"...

"On behalf of the WA VHF Group, thanks to the Exmouth people who have found time to look at restoring the beacons when there were plenty of other demands following the cyclone."

There is another postscript to the piece about beacons, which should be included to correct a possible misconception about the capacitor type which was temperature sensitive...

As a postscript, tests have since been done on the timing capacitor removed from the keyer. The cap was attached to a digital capacitance meter, which displayed a value about as expected ie 0.1 µF. The capacitor was subjected to warmth from a soldering iron held nearby (not touching) and the value decreased to about 0.05 µF!

The test was repeated on a number of capacitors of the same type, of the same and other values and nothing like the variation noted. So the check confirmed that it was a dud individual unit and not the Monolithic Multilayer Ceramic type in general at fault."

Thanks Don for that and, again, a special thank-you to the Exmouth people involved.

A note on multilayer monolithic ceramic capacitors. These come in several flavours. Listed below are a few, so be careful of the type you use. Each manufacturer has their own marking system to distinguish the type.

NPO characteristic - These are best used for circuits that require stable operation. They have a tolerance of ±5% with a temperature drift of approximately 30ppm/°C.

X7R characteristic - These can have a tolerance of ±10% with a variation of 20% over a temperature range of -55°C to 125°C.

Z5U characteristic - These can have a variation of +22% to -56% over a temperature range of -10°C to 8°C.

2F4 characteristic - These can have a variation of +30% to -80% over a temperature range of -25°C to 85°C. ... Luigi VK6YEH.

Colin VK5DK advises that the Mount Gambier beacons VK5RSE on 144.550 and 432.550 MHz are now back on air after the tower on which the antennas were mounted fell down! Thanks to VK5NC, VK5EE, VK5ZX, VK5MQ, VK5WCC and VK5DK the antennas are on a new tower at about 18 metres above the ground. Any reports of the beacons would be appreciated.

The antennas on 144 MHz are 4 x 4 element Yagi, 1 beamed East, 1 beamed West, 1 beamed North-West and 1 beamed North-East. On 432 MHz 2 x 8 element Yagi are used with 1 beamed East and 1 beamed West.

Web sites

Steve VK2KFJ <vk2kfj@qsl.net> has advised the following: *I have now setup a web page, for my 6 metre repeater list at: <http://www.qsl.net/vk2kfj/6m_rpt_rlist>.*

Also, for anyone who has their own e-mail account, and being a licensed amateur, can obtain an e-mail address and web space

for amateur related information. The e-mail will provide re-direction to your own home e-mail account and can be changed at anytime. This allows one to move ISPs at will, but still keep a fixed "amateur" related e-mail address, which contains your callsign in it. The fellow running it is a ham and runs it for hams and only asks for donations to keep it running. Just go to <http://www.qsl.net> and follow the instructions to subscribe, but remember, it takes a few days to get a reply!

Another site is <http://www.qrz.com> which is the callsign callbook database; anyone can check in and update their details, leave a photo or QSL card and add a "radio" related biography or just details that DXers will need to find someone.

I thought having my web page and QRZ database setup provides people anywhere in the world with the info on what I am doing or where I can be found and to promote those activities/modes I am interested in. I hope to do some extra pages on 2 metres and 70 cm weak signal activity at some stage in the future.

Also, there are two new mail reflectors that have been created: <vk-repeaters@onelist.com> which covers discussions on voice repeaters, linking, FM etc for VK/ZL region. To subscribe address it as follows: <vk-repeaters-subscribe@onelist.com>.

The other new list: <vk-packet@onelist.com> which covers discussions on packet radio, for VK/ZL region. To subscribe address it as follows: <vk-packet-subscribe@onelist.com>

To the Meteor Monitors

Gordon VK2ZAB reported that on 10/6 at 2150 quite long (8 to 10 words) meteor bursts from, he assumed, VK4TZL in contact with another on 2 metres SSB. Level about S5 to S6 dropping to occasional readability before next fully readable burst. He poses the question: What shower was this and when will it be available again?

Ron Cook VK3AFW replied: To Gordon and others - The Arietids Shower occurs between May 29 and June 19. Rates are 60/hr. According to Mike VK2FLR's article in AR some time back, the best 8 days are centred on June 7. So conditions should be good up to and including June 11.

After that the next shower is the Orionids from October 18-22, peaking nominally on October 22. Rates 25/hr, velocity 66km/s. This is debris from the tail of Halley's Comet. Supposedly best for E-W paths but works well from VK3 to VK4 on 2 metres.

Then there is the BIG ONE. The Leonids, with a nominal peak on Thursday November 18. Keep an ear and an eye on this for a day or so either side. This could be

even more spectacular than last year. At the very least it should provide many 30 second bursts on 2 metres.

Six metres

In a brief message, Graham VK6RO reported that in April he worked 9M2TO on six metres which gave him country number 40 after 20 years!

Ron VK4BRG advised that he was surprised to see a JA opening at this time of the year so early in the morning. On 30/6 at 2300 he worked JA2DDN on SSB. At 2330 he heard JR2HCB working VK4ABW in Townsville.

John VK4FNQ has been blessed with some signals on six, mainly from across the equator, many of them beacons and signal reports not strong. Still, it is winter, but it's a start. He reports as follows:

Monday 28/6

- 1130 JA2IGY/b 519
JA6YBR/b 319
JE7YNQ/b 319
- 1132 JA4CQS 5x9 worked VK4ABW
- 1135 JA9SSB 5x1 CQ on 50.110
JA2IGY/b 519
JA6YBR/b 419
- 1315 JA2IGY/b 319

Tuesday 29/6

- 1000 JA2IGY/b 519
V73SIX/b 519
JA1ZYK/b 419
JR0YEE/b 419
JE7YNQ/b 519
- 1037 C21JH 5x9 worked
V73SIX/b 319
- 1102 C21JH CQ
- 1223 V73AT 5x9 worked
V73SIX/b 419
- 1315 V73SIX/b 319

Wednesday 30/6

- 0945 49.750 weak, no amateurs

Thursday 1/7 (30/6 UTC day)

- 2315 JA2IGY/b 519
JA6YBR/b 599
JA1ZYK/b 419
JE7YNQ/b 319
- 2332 JR2HCB 5x9+ worked VK4ABW

Thursday 1/7

- V73SIX/b 419
- 1300 V73SIX/b 319

Friday 2/7 (1/7 UTC)

- 2315 JA2IGY/b 419
JA1ZYK/b 419
JE7YNQ/b 419
- 2323 JR2HCB 5x9+ CQ
- 2342 JA1AUD 5x9+ worked

- 2359 JA7KY 5x5 worked - heavy
QSB VK4ABW reported
hearing a BV4 on 50.110
- 0005 JA2IGY/b 529
JA6YBR/b 419

Saturday 3/7

- VK2RSY/b 519
VK2DN 5x9+ heard
- 0333 VK2TCL 5x9+ worked heavy QSB
- 0405 VK3SIX/b 419
- 0640 VK8VF/b 419
- 0905 V73SIX/b 529

Sunday 4/7

- 0410 VK8VF/b 599
- 0700 49.750 S2
- 0745 JR0YEE/b 419
- 0800 JE7YNQ/b 599
49.750 S9+

Monday 5/7

- 1135 JR2HCB 5x9 QRB VK4 Station
JA2IGY/b 319
- 1156 JG2BRI 559 50.010
JA2IGY/b 319

Ted Collins G4UPS writes that the first European opening "across the pond" was reported on 28.885 MHz when at on 19/5 at 2045 KP4BZ worked SP6GWB on six metres.

In a QSO with KP4BZ on 28.885 on 29/5 Ted was informed that he had also worked 6 or 7 French stations on six and KP4EIT had worked EH etc. EH7KW reported working W and VE on 26/5. Apparently no QSOs from the UK to North America during May.

Ted was involved in a big opening to LU on 16/5 from 1655 with six stations noted. CX2LI was in at 1732. No South American beacons heard.

Ted reports a series of tremendous openings commencing on May 16, then May 17, 19, 20, 21, 23, 24, 26, 28, 29 and 30. Countries worked: 5H3, 7Q7, 9A, 9H, CN, CT, CU, CX, DL, EH, EH6, EH8, EH9, ES, F, GU6, HB, I, ISO, LA, LU, LW, LY, LZ, OD, OE, OH, OK, OM, PA, S5, SM, SP, TZ6, YO, YU. That's 36 in all.

Whilst we somewhat wistfully look at the above list of countries, it is not all plain sailing.

Ted explains there are many occasions when it is difficult to make contacts, particularly new ones, because the band to 50.300 MHz has a signal on almost every kHz, many of them very strong. Hence the need to be adept at CW.

So, while in one way it must be good to have many signals available, the going would be very slow at times and no doubt, frustrating.

Two metres

Tony VK3CAT reports that the current high-pressure system is providing reasonable tropospheric signals. *From my QTH in Melbourne, on Tuesday 22/6 I worked VK5AKK outer Adelaide at 5x2 as well as VK3AEF in Nhill and VK3FIQ in Stawell, all contacts on two metres between 1100 and 1200. The Adelaide beacon VK5VF/b was still audible on 23/6 at 0500. Other stations heard on Tuesday evening were VK3TMP, VK3BRZ and VK3XLD.*

Ron VK3AFW advised that Max VK3TMP reported working Phil VK5AKK at 5x7 on 2 m on 22/6. On the morning of 23/6 Ron found signals to Andrew VK7XR at 529 were stronger by one S point, but were not as strong as expected.

Chas VK3BRZ reported that the same enhancement allowed him and David VK3XLD to work Phil VK5AKK on 2 m and 70 cm on Tuesday 22/6 evening. *Signals on 2 m were up to 5x7 and on 70 cm 5x4, although he gave us only 5x1, having no pre-amp.*

By the way, David now runs 220 watts to his 4 x 15 element DL6WU yagis on 70 cm, and to all intents and purposes has a station capability identical to mine, although he has not installed his mast-head pre-amp yet.

Gridsquare Standings

Guy VK2KU has provided the latest listings as at 1 July 1999. The VK-VHF Reflector carries the full listing down to 1 entry for each band. This is no problem for the Reflector but could be in AR where space is always at a premium.

Therefore the AR listings will commence at 10 squares for 144 MHz, 5 squares for 432 MHz, 3 squares for 1296 MHz and 1 square for all higher bands. There are listings this time for the bands 2304 MHz and above.

They are incomplete at this stage as the numbers have not previously been sought but are now open for additions. I have decided to include them as an incentive to others to add their scores.

144 MHz

VK2ZAB Gordon	58
VK3BRZ Chas	55
VK2DVZ Ross	52
VK2KU Guy	47
VK3CY Des	47 (+4 EME)
VK3TMP Max	45
VK2FLR Mike	42 (+68 EME)
VK3EK Rob	37
VK3XLD David	35
VK3KWA John	32
VK3BDL Mike	31

VK3CAT Tony	29
VK6HK Don	28
VK4KZR Rod	27
VK3BJM Barry	23
VK1MP Rej	21
VK6KZ Wally	19
VK2TZ Dale	16
VK3KA1 Peter	16
VK6KZ/p Wally	16
VK3AL Alan	14
VK3TLW Mark	14

432 MHz

VK2ZAB Gordon	33
VK3BRZ Chas	32
VK3XLD David	26
VK3CY Des	23
VK3EK Rob	18
VK3KWA John	18
VK3TMP Max	18
VK2DVZ Ross	17
VK2KU Guy	15
VK3BDL Mike	15
VK3BJM Barry	15
VK4KZR Rod	14
VK6KZ Wally	12
VK3KA1 Peter	11
VK3AL Alan	10
VK3TLW Mark	10
VK6KZ/p Wally	8
VK1MP Rej	5
VK3HZ David	5

1296 MHz

VK3KWA John	18
VK3EK Rob	11
VK2ZAB Gordon	10
VK3TMP Max	10
VK2DVZ Ross	9
VK4KZR Rod	7
VK3AL Alan	6
VK3BJM Barry	6
VK3BRZ Chas	6
VK3TLW Mark	6
VK3XLD David	6
VK6KZ/p Wally	5
VK2KU Guy	4
VK3KA1 Peter	4
VK6KZ Wally	4
VK3BDL Mike	3

2403 MHz

VK6KZ Wally	4
VK3KA1 Peter	2

3456 MHz

VK6KZ Wally	4
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5760 MHz

VK6KZ Wally	4
-------------	---

10 GHz

VK6KZ Wally	5
-------------	---

24 GHz

VK6KZ Wally	2
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Additions, updates and requests for the guidelines to Guy VK2KU. <guy@ics.mq.edu.au>, or by mail (QTHR 99). Next update in three months.

VK5 Divisional broadcasts

David VK5KK reports: *With the demise of the WIA SA Division's Burley Griffin Headquarters building on 30/6/99, a temporary home was required for the VK5WI station on 160 metres and 2 metres to continue the Sunday morning Divisional broadcast.*

As of 1/7/99, the SA VHF Group now run the VK5WI transmitters from the Water Tower club rooms. While it may sound a bit strange, The Group have maintained a fully operational 160 metre inverted V, with the apex 120 feet above ground level as well a choice of 2 metre antennas at the 120 - 160 foot level to use with the 2 metre link for the broadcast. This made the transplant of VK5WI simple.

On 30/6/99, while testing the 1825 kHz Viking Valiant AM transmitter, we managed to work VK2,3,4 and 5 on 160 metres AM. This attracted the attention of a number of VHF Group members ... surely a sign that the VHF/UHF bands have been dead for some time!

Closure

Specific news of openings generally remains scarce. We certainly are not repeating the winter-time contacts last year of the Northern Hemisphere. Maybe the next equinox will see a revival of activity on six metres and lead on to improvements on the bands 144 MHz and above. The microwave boys will want to see something worthwhile on 10 and 24 GHz this coming summer.

Closing with two thoughts for the month:

1. All your fingernails grow with inconvenient speed except the broken one, and
2. Show me a man who is a good loser and I'll show you a man who is playing golf with his boss.

73 from The Voice by the Lake.
ar

AMSAT AUSTRALIA

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**National co-ordinator:
Graham Ratcliff VK5AGR
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AMSAT Australia net:**

The AMSAT-Australia net is held on 80 or 40 metres LSB (Lower Side Band) each Sunday evening (except over the Christmas/New Year period).

During the winter months in South Australia (end of March until the end of October) the net is on 3.685 MHz +/- QRM with an official start time 1000UTC with early check-ins at 0945UTC.

During the summer months when daylight saving is in operation in South Australia (end of October until end of March) the net is on 7.068 MHz +/- QRM with an official start time of 0900UTC with early check-ins at 0845UTC.

The times and frequencies have been chosen as the best compromise for an Australia-wide net taking into consideration seasonal propagation changes and the various state summer time variations.

**AMSAT Australia newsletter
and software service:**

The newsletter is published monthly by Graham VK5AGR. Subscription is \$30 for Australia, \$35 for New Zealand and \$40 for other countries by AIR MAIL. It is payable to AMSAT Australia addressed as follows:

AMSAT Australia
GPO Box 2141
Adelaide SA 5001

Keplerian Elements

Current keps are available from the internet by accessing the AMSAT FTP site, ftp.amsat.org and following the sub-directories to "KEPS".

Phase 3D progress

With hopes high for a launch this year, the phase 3D spacecraft is undergoing its final series of pre-flight checks and tests. This included the successful test firing of the pyro-pins to release the solar panels and allow them to be unfurled by spring pressure.

All RF sub-systems of the spacecraft are reported as working perfectly. The main

thruster and the Arcjet mini-thrusters have also been tested and confirmed as working perfectly.

The 24-GHz transmission was singled out for special mention by project leader, Karl Meinzer DJ4ZC. He was delighted by the sound of the 400-baud PSK signal that was successfully detected using a 24-GHz to 145-MHz converter at the command station. This is ground-breaking stuff as very little RF communication happens on 24-GHz.

Heavy attenuation due to water vapour in the atmosphere restricts frequencies around 24-GHz mostly to non-communication RF devices. It will be a real challenge to receive this beacon from P3D when in orbit. The advantage is that a tiny dish will provide all the gain required. The LNA will be another matter! After the spin-balance and vibration tests, P3D will be transported to the launch site. Here is the frequency and mode table for Phase 3D as published by AMSAT.

Frequency/Mode table for Phase 3D

Uplinks	Digital	Analog
15m	N/A	21.210 - 21.250
12m	N/A	24.920 - 24.960
2m	145.800 - 145.840	145.840 - 145.990
70cm	435.300 - 435.550	435.550 - 435.800
23cm(1)	1269.000 - 1269.250	1269.250 - 1269.500
23cm(2)	1268.075 - 1268.325	1268.325 - 1268.575
13cm(1)	2400.100 - 2400.350	2400.350 - 2400.600
13cm(2)	2446.200 - 2446.450	2446.450 - 2446.700
6cm	5668.300 - 5668.550	5668.550 - 5668.800
Downlinks	Digital	Analog
2m	145.955 - 145.990	145.805 - 145.955
70cm	435.900 - 436.200	435.475 - 435.725
13cm(1)	2400.650 - 2400.950	2400.225 - 2400.475
13cm(2)	2401.650 - 2401.950	2401.225 - 2401.475
3cm	10451.450 - 10451.750	10451.025 - 10451.275
1.5cm	24048.450 - 24048.750	24048.025 - 24048.275

(Downlink is inverting = reverse)

Telemetry

Beacons	General	Middle	Engineering
2m	N/A	145.880	N/A
70cm	435.450	435.600	435.850
13cm(1)	2400.200	2400.350	2400.600
13cm(2)	2401.200	2401.350	2401.600
3cm	10451.000	10451.150	10451.400
1.5cm	24048.000	24048.150	24048.400

Transponder Modes:

Band	Designator
15m/21MHz	K
12m/24MHz	no designation at present
2m/145MHz	V
70cm/435MHz	U
23cm/1.2GHz	L
13cm/2.4GHz	S
6cm/5.6GHz	C
3cm/10GHz	X
1.5cm/24GHz	Ka

What we know as "modes" at present will be represented as a combination of at least two letters indicating the uplink(s) /

downlink(s) in that order.

As an example: Mode - V/U would be 2-m uplink and 70-cm downlink.

More Good News on High-speed Downlinks.

Since last month there have been several developments in this important area.

The new generation digital amateur radio satellites are capable of downlink rates far in excess of the current maximum of 9600 baud.

Until a month or so ago the reception and decoding of such signals was in the realm of the guru. The bandwidths involved are far too wide for the normal amateur transceiver.

It now appears that there will be several ways of achieving good results at this high speed without breaking the budget. A German company called Symek have available a number of choices from reasonably expensive to fairly cheap.

Only anecdotal evidence is available so far on the relative performance of these units. In the meantime Reg VK2RW is developing a design based on a similar principle. Depending on the outcome of tests, Graham, VK5AGR will arrange a 'bulk' purchase of the units, boards or whatever for AMSAT-VK members.

The modem is another area that needs attention to work the higher speed downlinks. Those who already have a 9600 baud G3RUH modem and don't mind "poking about with it" will have the opportunity to increase the speed to 38k4 with a few modifications.

David ZL2AMD, whose auto-tracker has served the satellite community well for some time has been developing a DSP modem to cope with the higher speed. Announcements are expected shortly on all these fronts.

In these days when one is tempted to think amateurs can't contribute to technology any more, it's remarkable how someone always rises to the challenge when the bar has been raised a few notches. Just a few months ago it seemed that it would all be either in the "too-hard-basket" or simply too expensive for most amateurs.

Want a REAL Challenge?

Tool-up for the "MERLION" payload on UoSat-12, UO-36. This will be a challenging area to enter. Merlion has an "L" band uplink and an "S" band downlink. The transponder supports analog and digital operations. Auto-track steerable antennas will be a must, but think of the SIZE. On "L" band, a dipole is a mere 12-cm or so long and on "S" band it is minuscule, only 6-cm or 2.5 inches long. Small dishes with dipole or helix feeds are often used on these frequencies. They are simple and easy to get going. Many amateurs will already have 1269 MHz transmitting apparatus, and 2.4 GHz converters will already be on hand in the shacks of those of us who operated with Oscar-13 before its demise.

Oscar-10's Spin-rate Drops Even Further.

Despite its age and being out of control for so long, Oscar-10 continues to serve to the amateur radio community. For some time now it has been obvious to users and listeners that Oscar-10 was slowing down. When under ground station control the spin rate was kept around 5 or 6 revolutions per minute which gavethe familiar "whoosh-whoosh" of the back-ground noise as the antennas swung around.

Since loss of control the rate has been seen to drop to a value difficult to measure. Jean-Louis, F6AGR has recently used the FFTDSP digital signal-processing program to analyse the beacon fluctuations. He reports that AO-10 has slowed to one revolution every 1203-seconds or a spin-rate of 0.05-rpm where stabilisation is non-existent resulting in the observed random behaviour of the beacon and through-put signals. Despite this AO-10 has provided some excellent contacts into North America and Europe in recent months ... amazing. Operators are urged to monitor the beacon on 145.810 MHz. If it observed to be "FM-ing", the satellite is in one of its periodic low-sunlight conditions and operation should NOT be attempted. Please observe this restriction as any attempts to operate under that condition could cause the satellite transponder to fail prematurely.

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EDITOR "Amateur Radio"

Mr Bill Rice has indicated his intention to retire towards the end of 1999.

Applications are invited for the position of Editor for "Amateur Radio"

The Editor will be appointed by Federal Council to be the Chairman of the Publications Committee. The Publications Committee is responsible for the publication of all WIA publications, subject to the direction of the Council and Executive. The Editor shall ensure that editorial policy of all publications is, in general, in accord with the policy of the WIA.

Applicants are expected to

- have a commitment to maintain and improve the quality of the present "Amateur Radio" magazine and other publications of the WIA
- be skilled in editorial and technical writing matters
- meet the regular deadlines involved in the timely production of a monthly magazine
- work with volunteers both on a one-to-one basis and in a Committee
- be available through email, phone and fax
- be licensed amateur radio operators and members of the WIA.

The Publications Committee is based in Melbourne and applicants outside of this area should not be deterred by this but need to advise on how they would work with this arrangement.

A small honorarium is provided to the Editor.

Applications should be forwarded to the Federal Office by 23 August 1999 addressed to Dr W J Howse, Director.

Enquires about the position can be made to him by phone and fax through the Federal Office or by email to armag@hotkey.net.au

REPEATER LINK

Will McGhie VK6UU

21 Waterloo Cr Lesmurdie 6076

VK6UU@VK6BBR

will2@omen.net.au

(08) 9291 7165

Mail Server

The mail server I mentioned last month is up and running. Thanks to Richard VK2SKY who pointed me in the right direction The server can be found at

<http://www.onelist.com/index.html>.

Do a search for vk-repeaters.

A mail server is a simple way to keep in touch with a large number of people who have a common interest via E-mail and more.

E-mail is a great way to keep in touch and is versatile but in its simple form there are a few limitations. With E-mail you can send one message to as many people as you like if you have their E-mail addresses. However one limitation is that it is difficult for all users to see all E-mail sent from all, to all. It can be done, but is time consuming and requires one person to do a lot of work.

A mail or list server does all the hard work for you.

This is how it works. I set up a list on a mail server and call it vk-repeaters. I run my list a bit like a synopsis. I then advertise the list giving its name, vk-repeaters, and the web address <http://www.onelist.com/index.html>.

Any person interested in the particular subject, in this case, unified voice repeater representation, can go to the web address given and register to be a member of the vk-repeaters list. The instructions are easy to follow. Once you have registered you now receive all E-mails posted on that list from all members. Any E-mail you send to the list is also sent to all members.

Even more

Not only is it a big forum for discussion but all E-mails are archived or saved on the list server. You can look at all past E-mails, even the ones posted before you registered.

Onelist, the name of the mail server, can also store files under your own directory, vk-repeaters, and members can download them. Files would normally relate to voice repeaters, eg documentation, circuits, photos etc.

Open access

The mail server on Onelist can be set up in a number of ways. It can be private or non-

private. Private means only those who have registered and have been accepted gain access. I have set the mail server up to be open.

You don't even have to register to view archived E-mails. However to be on the mailing list you do have to register. This is simple enough by just supplying your E-mail address and the list you want to be on.

What For?

So what is the purpose of the mail server? The intention is to gain, through being in touch, a strong voice in voice repeater regulations. I receive many comments from repeater managers and builders about their disappointment at the restrictions imposed on voice repeaters.

We have not had an organised say in voice repeater regulations in Australia. The WIA by default has taken the role but does not always have the people or expertise. This is not a negative criticism of the WIA.

Having now been in the inner sanctum of the WIA for a few years I believe I understand the way the organisation runs. A simple question, how would the WIA go about looking after voice repeater regulations on an ongoing basis, ever looking for improvements in regulations and even forging directions that would foster clever technological ideas?

I did say a simple question but the answer is not so easy. Ask any amateur and one of the answers might be, "Well it is their job, they should get on with it and do a better job". This then begs the question, who are "they"?

Let's say, for argument sake, that "they" all have a strong interest in HF DXing. That they give up a lot of time as WIA office bearers and are all mad keen HF DXers. Voice repeaters, as far as these amateurs would be concerned, would be a waste of time and spectrum space. These office bearers could well be called upon to sit in judgement on, and be required to give their thoughts on matters relating to voice repeaters.

The point is that, whether you a WIA member or not, you have little way of knowing who "they" are and how they go

about the job of voice repeater management at a regulation level. You have little way of knowing if their judgement is good or bad.

If you believe you can do more or better then don't expect the WIA to do it all. What is needed is a strong lobby group with expertise that the WIA can call on. No one will look after your interests better than you. If you have something to contribute, the mail server may well be the means to create that strong lobby group. The added benefit is that the WIA can use the mail server as a perpetual questionnaire, sampling members' thoughts on many varied matters.

Low Voltage

A few years back I presented a circuit for low voltage cut out of the 12-volt system at a solar powered repeater site. The point being, that should the charge voltage fail, it would disconnect the battery from the repeater once the battery had discharged below a pre-determined voltage.

This not only protects the battery from being overly discharged and will hopefully avoid accumulator damage, but also prevents the repeater from behaving in a manner that may not be desirable or predictable. Series voltage regulators require a voltage "Buffer" above the regulated output. Once the battery voltage drops below that point the regulator no longer functions and rail voltage falls.

A remote repeater in VK6, protected by a low voltage cut out, started behaving in a most unsatisfactory manner. The repeater was transmitting the low voltage alarm signal and occasionally remaining on transmit for extended periods of time. The control board time-out appeared not to be working.

Investigation showed that the repeater would remain keyed on if the battery voltage fell below about 8 volts. The mute would open and key up the repeater and the time out circuit would work and time out the transmitter. However as the battery voltage went even lower, the time out circuit failed to work and the transmitter would remain on transmit until the battery voltage dropped to a point where the transmitter VCO dropped out of lock and the transmitter turned off, protected by the out of lock circuit. Lucky this worked at the low battery voltage. The repeater was designed around the trusty old FM828.

This demonstrates a remarkable chain of events. The solar installation had not failed, but due to usage of the repeater the battery voltage eventually dropped below the low voltage cut out point of 11 volts.

However the low voltage cut out circuit had failed, for reasons yet to be discovered. This downward spiral of battery voltage resulted in the circumstance as described.

Had the low voltage cut out worked, the site would have been protected and simply been turned off until the batteries had recovered.

Lessons

The lesson learned here is for repeater operators to check what happens to their repeater as they wind the supply voltage down. Try it and you may get a surprise.

Alternative

Before visiting the site described above and in expectation that the low voltage cut out had failed, a quick replacement was needed. I did not have the time to build up a direct replacement, so I purchased a low voltage cut out kit from Dick Smith. Being a kit it was easy to build up and it worked.

The design is very similar to the one I had put together, except the voltage was removed from the load by using a relay. My design used a power MOSFET to reduce the current drawn by the circuit. The relay design draws 70 mA in total and is a worthwhile addition to any repeater site, particularly remote solar sites.

There are a couple of design changes to the Dick Smith kit that I hope to do; replacing the relay with a MOSFET, or reducing the relay current once the relay switches on.

However finding the time is the problem.
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I HOPE YOU all did well last month in the Australian Sprint Contest, which by the way was run by the Adelaide Hills Amateur Radio Club.

Another great contest the Waitakere 80m Spirit was also held in the latter part of last month. Both contests are of one hour duration and are great fun especially if time is against you. These contests are a great way to hone your operating skills and get in some extra practice before tackling some of the major international events.

The CW Operators QRP Club is pleased to announce a new award. The "MPK" or the Milliwatt Per Kilometre Award is available for both CW and SSB modes. You simply have to work the furthest distance with the least output power. The award will be made available to stations that achieve a successful QSO, over distances equal to, or greater than, the following:

Section	Power no more than	Distance at least	Km/mW at least
A	10mW	100km	10
B	100mW	500km	5
C	200mW	500km	3
D	500mw	1000km	2
E	1W	2000km	2

Verification requires the following:

- (1) Output power, Keydown for CW & PEP for SSB mode.
- (2) Latitude & longitude, grid squares, GPS or map reference (preferably two or more)

(3) Photocopies of QSL sent & received.

The fee for each award is A\$5 or 5 IRC's or five Australian \$1 postage stamps for posting within the UK. A station with individual awards in all sections (A to E) may apply for a special All-Stations Award for CW or SSB. There is no additional fee if applied for at the same time as the fifth individual award.

When sending for award details please send to:

**CW Operators QRP Club
Awards and Contest Manager
Ian Godsil VK3DID
57 Nepean Highway
Aspendale 3195
Australia**

A coloured A4 size certificate featuring appropriate images & the club logo as centrepiece, with the recipients details prominently displayed, will be awarded.

If you are not a member of the CW Operators QRP Club, I highly recommend it. "Lo Key" is a quarterly journal, full of information which includes contests, modification kits, circuits you can build, the list is endless.

Further information can be obtained from:

**Kevin Zietz VK5AKZ
Treasurer, CW Ops QRP Club
41 Tobruk Av
St Marys SA 5042
See you next month
Steve VK2SPS**

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Amateur Radio

Supporting the community

CONTESTS

Ian Godsil VK3DID,
57 Nepean Highway, Aspendale, 3195



Contest Calendar August - October 1999

Aug 1	YO DX Contest (CW/SSB)	
Aug 7	SARS Sprint Contest (CW)	(Jun 99)
Aug 7	Waitkere Sprint (CW)	(Jun 99)
Aug 7	European HF Championship (CW/SSB)	
Aug 14/15	Keymen's Club of Japan Contest (CW)	(Jul 99)
Aug 14/15	RD Contest (CW/SSB)	(Jul 99)
Aug 14/15	Worked All Europe DX Contest (CW)	(Jul 99)
Aug 21/22	SEANET SSB Contest	(Jun 99)
Aug 28/29	SCC RTTY Championship	(Aug 99)
Aug 28/29	TOEC WW Grid Contest (CW)	
Sep 4/5	All Asia DX Contest (Phone)	(May 99)
Sep 4/5	Bulgarian DX Contest (CW)	(Aug 99)
Sep 5	Panama Anniversary Contest (SSB)	(Aug 99)
Sep 11/12	Worked All Europe DX Contest (Phone)	(Jul 99)
Sep 18/19	SAC DX CW	(Aug 99)
Sep 25	Internet CW Sprint Contest	
Sep 25/26	SAC DX Phone	(Aug 99)
Sep 25/26	CQ WW RTTY DX Contest	(Aug 99)
Oct 2/3	VK/ZL/Oceania DX Contest	(Aug 99)
Oct 3	RSGB 21/28 Mhz Contest (SSB)	(Aug 99)
Oct 9	Ten-Ten Int. Day Sprint (CW/SSB/RTTY)	(Sep 99)
Oct 9/10	VK/ZL/Oceania DX Contest	(Aug 99)
Oct 16/17	JARTS WW RTTY Contest	(Sep 99)
Oct 16/17	Worked All Germany Contest (CW/SSB)	
Oct 17	Asia-Pacific Sprint (CW)	(Jan 99)
Oct 17	RSGB 21/28 Mhz Contest (CW)	(Aug 99)
Oct 30/31	CQ WW DX Contest (SSB)	(Sep 99)

I take this opportunity to say thank you to Peter Dawson VK4VW for all his help in keeping me informed with VK4 news and wish him well in his future projects in Amateur Radio. Thanks Peter.

An apology for incorrect dates of the Waitakere Sprints. Final information

arrived after the deadline for the July issue. The two events are one week later than previously advertised.

Thanks this month to VK4VW OH3WW SM3CER VK6NE ZL1BVVK VK2LEE

73 and good contesting Ian VK3DID

Result RAC Winter Contest 1998

(Call)	cat\	score)
VK2APK	SOLP	23788

RESULTS 1999 Harry Angel Memorial Sprint

Place	Call	Name	Points
PHONE 17 logs received.			
1.	VK5SR	South East Radio Group	52 points
2.	VK2AKJ	J Patrick	51 points
3.	VK4YZ	C Strong	47 points
4.	VK1TX	A Ihasz	46 points
5.	ZL1CLE	L Riestler 43 points	Highest DX
5.	VK4DD	N Baker	43 points
6.	ZL1BVK	A Learmond	42 points
7.	VK2LEE	L Noonan	37 points
7.	VK4LAJ	A Jaroszuk	37 points
8.	VK4EHT	B Jones	36 points
9.	VK4DMC	M McCarthy	30 points
9.	VK3VDP	D Pendergast	30 points
9.	VK2SIG	J McL Bennett	30 points
10.	VK3MGZ	J Laan	26 points
11.	VK4DI	L Efferney	21 points
12.	VK4EJ	B McIvor	20 points
13.	VK3ABP	W Rice	15 points
14.	VK3DID/GRP	I Godsil	10 points

MIXED 3 Logs Received.

1.	VK2BO	E.L Andrews	50 points
2.	VK5UE	C Low	36 points
3.	VK3YE	P Parker	17 points

CW 7 Logs Received

1.	VK5NJ	J Nieuwenhuizen	44 points
2.	VK2AJE	B Mills	30 points
3.	VK5XE	I Northeast	28 points
3.	VK4LP	J Lemura	28 points
4.	VK3DID/GRP	I Godsil	24 points
5.	VK4XW	G Harmer	22 points
6.	VK8HA	H Anderson	10 points

Results Ross Hull Memorial

VHF-UHF Contest 1998 - 1999

Presented by John Martin VK3KWA Contest Manager

Call	name	score
VK3XPD	A. Devlin	3951
VK3EK	R. Ashlin	3186
VK3CY	D. Clarke	3080
VK2FZ/4	A. Pollock	2496
VK5AKK	P. Helbig	2489
VK7XR	A. Hay	2134
VK3BJM	B. Miller	1452
VK4ZTL	G. McNeil	1410
VK3AEF	J. Bywaters	1188

The 1998 - 1999 contest was the most disappointing in many years, with very little activity on the air. It comes after a period of decline in DX activity - not just contest activity - over the last four or five years. I find it surprising because there are more multi-mode radios in circulation than ever before. The problem seems to be that these radios do not get enough use, even during DX openings.

Over the years there have been various

changes to the rules in an attempt to respond to complaints from some entrants, and maybe these changes have failed to encourage activity from the majority who have not complained.

The only significant change last time was to shorten the contest. This may not have caused the crash in activity, but it obviously didn't help either. It is being reviewed, as are other options to widen the appeal of the contest.

Some rules will have to be rewritten to reduce the number of invalid contacts, especially the perennial problem of QRM on DX calling frequencies. I thought this one was just about solved, but it made a major comeback in the last contest. The main reason for the late publication of the results this year was the need to consult with the Contest Co-ordinator about the disqualification criteria. Enough said?

I would like to thank all those who put in logs this time and I hope the next contest - which will be the fiftieth - will be more successful. Full details of the results, and a more detailed discussion of the rules for the next contest, have been posted to all entrants.

Bulgarian DX CW Contest

0000 - 2400z Sun 5 September,

Bands 80 - 10 m. Mode CW only. Exchange RST plus

ITU zone (P2 = 51, VK4/8 = 55, VK6 - 58, VK1/2/3/5/7 = 59).

Score six points for each QSO with an LZ, three points for each QSO outside your WAC continent with a non-LZ, and one point for each QSO within your WAC continent. SWLs score three points if both exchange numbers are copied, and one point if only one exchange number is copied.

Multiplier is total ITU zones worked on each band. Final score is total QSO points (all bands) times the total multiplier (all bands). Send logs postmarked by 1 Oct to: Central Radio Club, Box 830, 1000 Sofia, Bulgaria.

Panama Anniversary Contest

6 September, 0001 - 2359z Sunday

The Panama Radio Club invites all radio amateurs to participate in its 26th annual contest. The only category is single operator.

Mode: SSB. Bands: 40/20/15 m.

Exchange RS plus serial number.

Score two points for QSOs with HP stations and one for others.

Multiplier is the total DXCC countries worked on all bands. Certificates of participation will be sent to all amateurs working 10 or more HP stations, upon receipt of three IRCs, and a plaque to the highest scoring station in each continent. Send log postmarked by 28 November to:

Radio Club Panama Contest, Box 10745, Panama 4, Panama, or via packet to HP1BY@HPICDW.PANCTY.PAN.CEAM, or via e-mail to hlewis@supremtepy.com

Scandinavian Activity Contest

CW: 18 - 19 September Phone: 25 - 26 September

1200z Saturday - 1200z Sun

Object is for amateurs world-wide to contact as many stations in Scandinavia as possible, on bands 80 - 10 m (no WARC).

Scandinavian prefixes are: LA/LB/LG/LJ (Norway); KW/IX;

OF/OG/OH/OI (Finland); OFO/OGO/OHO (Aland Is); OJO (Market

Reef); OX/OY; OZ/5P (Denmark); SI/SJ/SK/SL/SM/7S/8S (SWEDEN);

TF.

Categories (all bands only) are: single operator; single operator QRP (max 5 w/p); multi-operator single transmitter; SWL. Exchange RS(T) plus serial number starting at 001. For each QSO, score one point on 20, 15 and 10 m, and three points on 40 and 80 m. The multiplier is the number of call areas (0-9), not prefixes, for each Scandinavian country worked on each band. Portable stations without a district number count as area 0, eg G3XYZ/LA counts as LA0. OH0 and OJ0 are separate call areas. Final score is total QSO points (all bands) times total multipliers (all bands).

Use standard format for logs and summary sheets. Show duplicate QSOs with 0 points. Dupe sheets are required for 200+ QSOs. Send separate logs for CW and phone sections. Logs on 3.5" DOS disc are welcome and must be in ASCII, one QSO per row, and labelled with the call, contest name, section/s and contest date. Include an SASE if you want your disc returned. Summary sheet must be on paper. The mailing address alternates between SSA (Sweden), NRRL (Norway), EDR (Denmark) and SRAL (Finland) in that order. For 1999, send your log postmarked by 31 October to:

Hannu Saila OH3WW, Muurinkorventie 17,

Ylojarvi, FINLAND. Logs may be sent by e-mail to: <sac99@sralfi>

CQ WW RTTY Contest

25 - 26 September, 0000z Sat - 2400z Sun

In this contest, the object is to contact as many stations world-wide as possible using digital modes [Baudot, ASCII, AMTOR (FEC and ARC) and packet] on bands 80-10 m. No unattended operation or operation through gateways or digipeaters, etc. Stations may operate for full 48 hours.

Categories are: single operator unassisted, single and multi-band; single operator assisted, all band; multi-operator single Tx, all band ("10 minute" rule applies to this category EXCEPT that one - and only one - other band may be used during the 10 minute period if - and only if - the station worked is a new multiplier); multi-operator multi-Tx, all band. Single operator entrants can enter the low power section (up to 150W) or high power (more than 150 W).

Stations may be contacted only once per band, regardless of the mode used. Exchange RST plus CQ zone; W/V/E will send RST, state or area, and CQ zone. Score one point for each QSO with stations in your own country, two points for each QSO outside your own country but inside same WAC continent, and three points for each QSO with stations outside your own continent.

On each band the multiplier equals the sum of US states (Max 48) and Canadian areas (max 13) PLUS DXCC countries (including W and VE) PLUS CQ zones (max 40). Note: KL7 and KH6 are claimable as country multipliers only, not state multipliers.

Canadian areas are VO1, VO2, VE1 (NB), VE1 (NS), VE1 (PEI), VE2, VE3, VE4, VE5, VE6, VE7, VE8, VY. Final score equals total QSO points times total multipliers from all bands.

Submit a single summary sheet including scoring calculations for all bands, plus for each band a separate log, duplicate check list, and multiplier check sheet. Send logs postmarked by 1 December to: Roy Gould KT1N, CQ WW RTTY Contest Director, Box DX, Stow, MA 01775, USA. A comprehensive range of plaques and certificates is offered.

1999 VK/ZL/OCEANIA DX Contest

Phone: 2 - 3 October, 1000z Sat to 1000z Sun
CW: 9 - 10 October, 1000z Sat to 1000z Sun

Object is for stations throughout the world to contact as many stations as possible in VK, ZL and Oceania. WAC boundaries apply. Contacts between different countries in Oceania are permitted, but contacts within same country are not permitted.

Bands: 80 - 10 m (no WARC).

Categories are: single operator all bands; multi-operator all bands; and SWL. (Single operator stations are where one person performs all operating, logging and spotting functions.)

Exchange RS(T) plus a three or four digit number starting at 001 and incrementing by one for each contact.

icom Clearly Ahead



"VK3LZ calling!"

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BOOM IN HAMFEST INTEREST CONTINUES

As we said in last month's column Hamfests are going from strength to strength with the trend to new equipment sales continuing. Some recent examples were the Port Macquarie Hamfest and the Mt. Gambier Hamfest.

Port Macquarie attracted near record attendances and, despite atrocious weather, Mt. Gambier also had a good attendance with everyone there taking advantage of the opportunity to snap up some bargains on new equipment. We're sure the trend will continue... Hamfests are really where it's all happening!

ICOM DEALER EVENTS ALSO PROVING POPULAR

The special Icom days we have at various dealers around the country are also being extremely well attended. In fact, they've become more like mini-hamfests as a recent event at the Amateur Transceiver Radio Centre showed. Held on June 19 there was a fantastic response from amateur enthusiasts who were there to check out all the latest communications innovations from Icom.

It's an annual event so make sure you mark it down in your diary for next year. Incidentally, the hospitality provided by Les from ATRC is legendary!

MORE DATES FOR THE DIARY

Wagga Wagga Hamfest August 8
Frankston Hamfest August 21
Nambour Sunfest August 28
Shepparton Hamfest September 12

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Multiplier: On each band this is the number of prefixes worked on that band. A "prefix" is the letter/numeral combination forming either the first part of the call sign, or else the normal country identifier for stations using their home call sign in another DXCC country, eg W8, AG8, HG7 and HG73 are all separate prefixes. The prefix for both N8ABC/KH9 and KH9/N8ABC is KH9. Portable designators without numbers are assumed to have a zero after the letter prefix, eg N8ABC/PA becomes N8ABC/PA0. Any calls without numbers are assumed to have a zero after the first two letters, eg RAEM becomes RA0EM. Suffixes indicating maritime mobile, mobile, portable, alternate location, and licence class do not count as prefixes, eg /MM, /M/P, /A, /E.

All stations score 10 points on 80 m; five points on 40 m; one point on 20 m; two points on 15 m; and three points on 10 m. Final score is total QSO points multiplied by the total number of prefixes worked. The same prefix can be claimed on different bands.

Use a separate log for each band, with times in UTC. Show new prefix multipliers the first time they are worked. Logs should be checked for duplicates, correct points and multipliers and should be accompanied by a list of prefixes worked on each band. Summary sheet should show call sign; name; address; category; number of valid QSOs; points and multipliers on each band; claimed score and a signed declaration that the contest rules and radio regulations were observed.

SWL logs should show date; time; call sign of station heard; call sign of station being worked; RS(T) and serial number sent by the heard station; points claimed and new multipliers.

Send logs in written style, or on 3.5" DOS disc in ASCII format with written summary sheet to: VK/ZL CONTEST MANAGER, 2 MOSS COURT, KINGSLEY, 6026, WEST AUSTRALIA. Overseas entrants please use air mail. Logs may be sent by e-mail to: <vk3lne@upnaway.com.au>

Please send all logs within three weeks of CW Contest (1999 = 1 November). Awards: Certificates will be awarded to — DX: top scorer in each continental area; top scorer in each country where there are more than five entries from that country, or if fewer than five, score more than 500 points.

VK/ZL: top scorers for VK & ZL; top scorers for each band in VK & ZL. Where justified, additional awards may also be made at the discretion of the Contest Manager.

The CW entrant with the highest score will be awarded the Frank Hine VK2QL Memorial Trophy and receive an attractive wall plaque in permanent recognition of that achievement.

In matters of dispute, the Contest Manager's decision will be final.

SCC RTTY Championship

28 - 29 August 1200z Sat - 1200z Sun

Object: for amateurs around the world to contact as many other amateurs as possible. **Mode:** Baudot.

Bands: 80 - 10 m (no WARC).

Categories: Single operator single band; single operator all bands; multi-operator all bands.

Sections: High power (200 w o/p or more); Low Power (less than 200 w o/p).

Exchange RST plus four digits of the number of the year your amateur licence was FIRST issued.

Score: one point for QSO in own call area; two points for QSOs with other Oceania call areas; three points for QSOs outside own continent.

Multiplier: one point for each different licence year worked on each band.

Final Score is total QSO points X total multipliers on all bands.

Logs must show time UTC; band; call sign; exchange; points claimed; multipliers at first time of working.

Summary Sheet should show call sign; address; number of QSOs; points and multipliers for each band; total score; signed declaration. Send logs in written form or on disk to:

Slovenia Contest Club,
Saveljska 50, 1113 Ljubljana,
Slovenia.

Logs may be sent by e-mail to: <scs@hamradio.si>

All entries by 1 October.

RSGB 21/28 MHz Contest

SSB: Sunday 3 October 1999

CW: Sunday 17 October 1999

0700 - 1900z

Frequencies: SSB 21.150 - 21.350, 28.450-29.000 MHz

CW 21.000 - 21.150 (but avoid 21.075 - 21.125)

28.000 - 28.100 MHz

Categories: Single operator; multi-operator

Sections: Open; Restricted; QRP (max 10w o/p); SWL

"Restricted" entrants must use only one single element antenna at not more than 15 metre height and 100 w o/p. Any packet cluster or other spotting facilities makes an entrant multi-operator.

Score three points for contacts with UK stations.

Multiplier is each UK district (max 124) worked on each band. Send logs by mail to: RSGB Contest Committee, c/o 77 Bensham Manor Road, Thornton Heath, Surrey CR7 7AF, UK, by 15 November, 1999.

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INTRUDER WATCH

Gordon Loveday VK4KAL

Freepost Nr 4
RUBYVALE QLD 4702
VK4KAL @ VK4JEM
Fax/Ph 07 4985 4168

"An influx of 'old fashioned' AM transmitters, running the legal limit, would decrease the amount of illegal CB operation in this popular (28MHz) Band. The solution is in your hands, so grab it."

I wish to thank Rohan ZL1CVK Reg 3 ex co-ord, for all his assistance whilst he held that position. I hope he can find time in his retirement to send in some observations to his ZL coordinator!

On the intruder front, not a great deal has come forward from the rest of region 3. The unhappy state on 40m still exists, with about 70% being used by broadcast stations and CB type intrusions.

A notable nuisance is Radio Republic Indonesia, which for some unknown reason thinks transmitters on 7.098.3 is their best chance of getting out to the world, but we will again make representations to their administration to cease operations within the legal amateur band.

10 MHz band is suffering from FIB but no observations have come forward as to shift and baud rate.

14 MHz over-all rather quiet, but a few still persist, eg, 14.001.8 and 14.003.2 are

"left overs" from 1998, but have a much greater signal strength 14.185.5 seems to be the favourite frequency, with UI VFT signals un-identified printers to the lay person.

North Korea still persists on 14.250 being the 5th harmonic of 2.850 kHz power of 120kw or there-about.

18 MHz... Indian signals coming through on 18.075 and 18100 are regular, possibly from Government Departments usually speaking Hindi or English, AM or SSB.

21 MHz... Not many reports from the VK area. Other R3 areas are hearing Arabic non-amateurs talking to South American and Africans on the top end of band.

24 MHz... Very quiet.

28MHz... Too many CB type operations going on: with NBFM stations making a play for its use, as well as the Cuban on 28.650, which of course is a 3rd harmonic... obviously their technician has

never found out how to curb harmonics.

I re-iterate, an influx of "old fashioned" AM transmitters, running the legal limit would decrease the number of illegal CB type operations in this very popular amateur band. It is open most days from my QTH to "somewhere". We have plenty of bandwidth, so why don't we use it, not complain about others using it. The solution is in your hands so grab it and do more than "leave it till tomorrow"... that may be too late.

Thank You,
Gordon VK4KAL FIWC
ar

SEND YOUR REPORTS BY PH/ FAX MAIL OR PACKET TO GORDON LOVEDAY

Frequency:.....

Date:.....

UTC:.....

Emission:.....

RST:

Ant Bearing:.....

Content: Identification:

Other Details:.....

ALL REPORTS HELP TO STOP INTRUDERS IN YOUR BANDS.

SNIPPITS

The electric battery was discovered by Alessandro Volta; although he was just investigating the effect first noticed by Luigi Galvani.

Galvani was an anatomist researching the muscles on frogs. He cut the frog through the waist and pushed an iron wire into the remaining backbone as a handle.

When he laid the legs on his zinc cutting board the legs would twitch every time the iron wire touched the zinc. He referred to this effect in his notes but made no effort to deduce its meaning. (From this experiment we get the old world expression "galvanised into action", which has nothing to do with having a silver-coloured coating.

He did notice however that when the iron wire was left on the zinc for some time it became coated in zinc and the process became known as galvanising.

What did Volta do? He placed dissimilar metals together separated by a piece of cloth soaked in brine. A stack of these cells is known as the Voltaic Pile which generates around a volt per cell.

Hey, that's a one Volta cell, no!

Summary for June 1999

Freq.	Date	UTC	EM	Details
03.560	0506	1025	A3E	R.Korea, Pyongyang, ID Positive
07.098**	3006	1000>	A3E	R.Indonesia Night Transmrx
14.001	1306	0950	AC3	UIFAX drum sp 120rpm @ cf
14.0018	2006	0920	F1B	UIVFT, Nil shift or Baud Rate ??
14.003	2706	0751+	F1B	UIVFT,sum AC3 & NON.
14.0032	2206	0830	AC3?	UIFax? Stn closed 1130z
14.004	1806	1250	Fxx	UIFax
14.026	0806	1240	J3E/L	UIBC, also on Usb, M&F voicesD.
14.040	1806	1300	A3E	UIBC Chinese text?
14.156	0606	1220	F1B	UIRTTY H speed
14.188	0606	1030	F1B	UIRTTY no further details
14.2115	2806	0555	F1B	UIVFT 850Hz 112Bds
14.239	2806	0430	F1B	UIVFT 250Hz shift copy 1 Hr
14.250	2106	1100>	A3E	UIChinese BC stn + unknown ID
14.317	0406	0629	A3E	UIBC, Singing ...then NON only
18.150	1806	1039	A3E	Ui Phone patch, non-amateur
21.257	2006	1254	F1B	UIVFT Printer System
18.077	2905	0306	J3E	UIBC,CB type op, nil c/sign
28.048	1706	1015	xxx	UIFSK, CW
28.650	2106	2220	A3E	Habana, 3H 9550, Cuba ID 100 CW

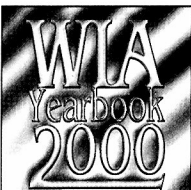
SPOTLIGHT on SWLING

by Robin L. Harwood VK7RH

5 Helen Street, Newstead Tasmania 7250

(03) 6344 2324

E-mail: robroy@tassie.net.au



**Please be quick!
Send your :-**

- * Comments
- * Suggestions
- * Club Details
- * Net Details
- * Beacon Details
- * Repeater Details
- * AR Web Site Details
- * Morse Practice Freq.
- * Bureaux Addresses
- * Special Event Dates
- * Reference Data

**-or anything else that
you think should be in
YOUR callbook to:-**

Callbook 2000
c/o WIA Federal Office
PO Box 2175,
Caulfield Junction VIC 3121
armag@hotkey.net.au

Have you recently checked your connectors to see if they are indeed making contact?

My dipole antenna was up but the guy ropes had absorbed too much UV and had deteriorated. Having some practical assistance from Mark, VK7KMA, the antenna was lowered and hoisted back up with the guys replaced with fencing wire.

We also checked the connections on the switches closest to my receivers and they were making a poor connection. While that was being checked, I also put in a high impedance connection for LW and MW.

What a big difference!

I was beginning to think that my trusty Icom R70 was going deaf but since these minor changes, I now hear signals much better.

For example, I was amazed to hear a low-powered station in the 31-metre band. It is on 9720 kHz and I observed it at around 0715 UTC, naturally in Spanish. Some bulletins and lists say it is Radio Victoria in Lima, Peru but I am not certain if it indeed was that station.

Never assume that a signal you hear, is the same as that reported in a magazine or elsewhere as being on that channel. I recently did see a logging of a Brazilian station yet it turned out to be a relay station of the Spanish Foreign Radio in Costa Rica in Central America.

Listen very carefully and see if you can pull out any identification announcements. It also would assist if you had a tape recorder online because often these hairline signals can last for only a few minutes and by playing it back, often will give important clues.

So I can now listen on the long and medium waves and can hear non-directional beacons (NDBs) between 200 and 438 kHz. These beacons guide aircraft as they fly about Australia and are spaced every 3 kHz. Some also have automatic weather information announcements in voice.

Here in Launceston there is one on 242 kHz between 6:15 a.m. and 7:30 p.m. daily. It is regularly updated. In Devonport and Wynyard, it is an automated voice information service with Devonport on 281 and Wynyard on 302 kHz. All NDB's have a CW identifier and a list of these in frequency order is found on page 50 of the 1999 WIA callbook.

I have even heard an NDB in Charleville (QLD) on 269 kHz in the evening hours, over 1500 miles from northern Tasmania.

When I first commenced listening I do recollect hearing control tower traffic from some of these NDB's. I know that the Launceston beacon often did in the late 50's. Also there used to be a facility at Avalon, near Geelong which was doing this as late as the early seventies on about 260 kHz.

There was a powerful NDB on 1615 kHz until two years ago, located near Mount Egmont on the NZ North Island. This was for Trans-Tasman traffic and became a reliable indicator for 160 metres DX. There may be a few NDB signals from Niugini around 1.7 to 1.8 MHz if they have not been phased out by now.

Kosovo Crisis

The Kosovo Crisis ended when NATO troops entered after the withdrawal of Serbian troops. Almost simultaneously, the NATO bombing campaign ended. Because the media infrastructure within Kosovo was in turmoil, an independent station, Radio 21, started broadcasting via the Flevo transmitters of Radio Netherlands from 1830 to 2027 on 9495 kHz. Programs are in Albanian but an English News bulletin is apparently aired in the final few minutes.

The shortwave transmitters of Radio Yugoslavia are reported to be back on air but I have not personally heard them.

The Electronic DX Press is still going strong. I believe that they are going to issue a regular summary in hard copy approximately every six weeks. It is by subscription only.

For further details, write to 404 Mont Albert Road, Surrey Hills, Victoria 3127 or e-mail to bpadula@compuserve.com.

I believe that Radio St Helena in the South Atlantic will be operational, perhaps for the last time over shortwave. The date will be Saturday October 23 from 1900 to 2300 UTC on 11092.5 USB. Propagation has been fickle to this location and now that the Sunspots have risen dramatically, I do hope to finally hear it this time. Yes it is on the Internet but from a site in Sweden.

Keep listening and until next time! 73,

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The best place to start is the Remembrance Day Contest in just a few days time on the weekend of the 14th and 15th August.

NOVICE NOTES

Peter Parker VK3YE

12/8 Walnut Street, Carnegie, Vic 3163

Email: parkerp@alphalink.com.au

Novice Notes Online: <http://www.alphalink.com.au/~parkerp/online.htm>

Please note that this is Peter's correct address.

An introduction to Contesting

A major amateur radio interest is contesting. Whether your favourite activity is HF or VHF, Morse, phone or digital modes, there's sure to be a contest for you.

Competition on the air

So what is a contest? A contest is an organised event where participants make as many contacts as possible within a given time.

Apart from being an exciting and absorbing activity in its own right, contesting allows you to test the efficiency of your station together with your operating skills.

Contesters keep a record (log) of the contacts they make and send it to the contest manager afterwards. The contest manager checks the logs and submits the results to be published in Amateur Radio and on the WIA Federal Internet web page -

<http://www.wia.org.au>

Several months later the top scoring stations get a handsome certificate in the mail for their efforts.

Why do people enter contests?

People enter contests for various reasons. Some hams are driven by a competitive urge to be number one. They get a great buzz out of pitting their station and operating skills against others around the world.

Those who wish to talk to as many countries as possible and collect QSL cards for one of the many operating awards on offer find that international contests bring out rare stations not active at other times.

Others use contests to test the effectiveness of a new piece of equipment or antenna because of the large number of stations on air.

Types of contests

There are contests for all types of operators. Some are single band and single mode, while others are multi band and multi mode. The length of contests varies, from under an hour to as much as four weeks. Most major contests, however, run for 24 hours. The

pace of operating ranges from relaxed to hectic.

Further information on major Australian contests is given later.

Choosing a contest

A comprehensive list of coming contests is given each month in Amateur Radio. Rules for the more significant of these is also given there and on the Australian Contesting Web page at URL

<http://www.uq.edu.au/radiosport/>.

If you haven't been in a contest before, start with one of the short scrambles or sprints on 80 metres. If you only have VHF/UHF privileges, try one of the more popular VHF/UHF contests such as the Remembrance Day or John Moyle Field Day.

Local contests are preferred because the pace of operating isn't as fast as international contests and it's easier to make yourself heard, especially with low power

and a limited antenna system.

Other groups also run contests. For example, the CW Operators' QRP Club has hour-long CW scrambles on various bands. Some WIA Divisions also have their own contests. Other novelty contests occur from time to time. An example was this year's successful Radio on Rails Fun Day, sponsored by the Moorabbin and District Radio Club, which encouraged activity from trams and trains around Melbourne. All these are excellent contests for beginners, as the pace of operating is fairly slow and/or the contest period is short.

Most international contests are open to Australian amateurs. Those that give extra points for prefixes worked are particularly good for us, as VK is not a common prefix in many parts of the world. However, participation in these events is suggested only after you have gained experience in one or more of the local contests.



Photo 1. Participating in DX contests is a great way to add more QSL cards to your collection.

The main Australian contests are:

Remembrance Day Contest (August)

Australia's biggest contest. States compete for RD Trophy. Highly recommended.

VK-ZL-Oceania DX Contest (October)

An opportunity for overseas stations to work Australia and New Zealand and vice versa. If 10 and 15 metres are your best bands, this one is worth a shot.

VHF/UHF Spring Field Day (November)

A chance to go portable on the VHF/UHF bands. Activity is on SSB and FM.

Ross Hull VHF/UHF Contest (December/January)

THE contest for the serious VHF/UHF DXer and microwave enthusiast. Most activity is SSB rather than FM, so Novices will find contacts difficult.

VHF/UHF Summer Field Day (January)

Another opportunity to go portable on VHF/UHF. Activity is on SSB and FM.

John Moyle Field Day (March)

Portable operating on all bands. Great fun!

VK Novice Contest (June)

A HF-only contest originally intended for newcomers to amateur radio - not as popular as most other contests.

Making your station contest-ready

There are several aspects to consider when setting up a contest station...

* Efficient equipment.

Transceivers with intermittent faults have no place in the fast-paced environment of a major contest. Either fix it or use another rig.

Equipment attributes such as receiver dynamic range, variable selectivity (especially on CW), punchy but clean speech processing, low levels of internally generated receiver noise, and fast transmit-receive switching will all aid HF operating.

A big linear amplifier is not a prerequisite for a successful contest operation; even homebrew QRP rigs can do quite well in contests provided that they are not the ultra-simple 'bare bones' types that omit desirable features such as VFOs, audio filtering, sidetone, easy transmit/receive switching, etc.

On VHF and UHF FM, set your equipment to tune in 25 kHz steps and remember the most popular simplex frequencies to allow quick frequency changes when required.

* Reasonable antennas.

You should get some contest contacts with almost any antenna, but to win, good antenna performance is a must.

Receiving performance is as important as transmitting performance - you need to hear them to work them. If noise is a problem in your area (particularly on the lower HF bands) you may need to consider a separate antenna for receiving, such as a rotatable magnetic loop.

Generally speaking, simple dipoles and verticals are entirely adequate for the station not expecting more than an average score, particularly in Australian contests.

* Freedom from interference.

There is nothing worse than having to shut down because of a TVI complaint in the middle of a contest. Do some operating

in the week prior to the contest to assess band conditions, station performance and to establish whether TVs in the neighbourhood will be affected by your activity.

Interference to your station is important - ensure others are not using appliances that cause interference while you are operating.

If you plan to use a computer log, test to ensure that the computer does not spoil reception. If there is any degradation to receive performance, use a paper log instead.

* Station layout and operating position.

All frequently used equipment should be within arm's reach of the operator. Antennas should be controllable from the shack, so that the contest operator doesn't have to go outside to change them.

Band changing should be easy and quick. If using HF, it is desirable (but not essential) to have a second transceiver or communications receiver handy so you can monitor WWV or scan other bands for activity while operating. The operating table should have plenty of room for writing if a manual log is to be used. Comfort is important as you will be at the radio for several hours at a time, so invest in a good swivel chair and ensure that both it and the table are at a comfortable height.

Preparing for the contest

Before the contest read the rules and consider which section and category to enter. Depending on the contest, there may be a choice of phone, CW or open modes, VHF, HF or all band and various operating periods. Not all contests have as many sections as this - some have the CW and phone sections as separate contests on different weekends. Factors such as station location, equipment and bands available, likely propagation, and time available will influence the section chosen.

Have a realistic expectation of what you can achieve in a contest, taking into account factors mentioned above. As an example, a



Photo 2. Contest stations can be simple or complex. Shown here is a station for two metres FM and 40 metres CW.

Novice operator in the country wanting a big score is likely to be disappointed if they used VHF only.

On the other hand, if their main aim of entering the contest was to confirm that they could be heard by city stations on a new antenna they have built, they could come away from the contest with their expectations satisfied. A country operator aiming for the big score might have been better off to work HF instead.

Particular contest rules can skew operating patterns and influence activity. An example is the requirement in the RD Contest that HF contacts be made outside

one's own call area. Even if a mediocre antenna were being used, a novice station in Canberra would be almost guaranteed worthwhile results on 80 metres because of the small size of the ACT and the large number of close-by operators in VK2 and VK3.

In contrast, the same station with a similar antenna in Perth would find contacts difficult on 80 metres because of WA's great size and distance from all other states. If he wishes to persist in the HF section, he should upgrade his 80 metre antenna and/or plan to concentrate his activity on 15 and 10 metres. If neither of these paths is possible, entering the VHF section may be preferable.

The lesson of these examples is to consider your circumstances and how the rules and scoring system will affect your activities. Last year's results can give a guide to the relative popularity of contest sections and the scores you need to get to be competitive.

If no one entered a particular section last year, try it this year - the chances are that you will be the only entrant and therefore receive a certificate.

Know the capabilities of your station. Your normal operation should provide the information needed, including the directions most and least favoured by your location and relative performance on

[illegible]

Figure 1. A log sheet suitable for this month's Remembrance Day Contest and most other Australian contests.

various bands. A good opportunity to check this is to note the signal reports given when several locals are calling a distant station. If the signal reports you get are consistently weaker than for most others, your operating procedure will be different than if you are one of the louder stations.

In the hour before the contest, read the rules, look at propagation charts and check the operation of antennas and equipment. Ensure that you have sufficient pens, paper, and log sheets available. Figure 1 is pro forma contest log sheet suitable for Remembrance Day and many other contests. Photocopy it and use it.

During the Contest

The big band is approaching the twelve on the station clock, and, with microphone in hand, you're poised to make your first contact in your first contest.

So how do you get contacts during contests? There are two main ways. Either scan the band looking for stations that are calling CQ ('search and pounce' approach), or put out calls yourself. The tactic chosen depends on things like band activity, propagation and the capabilities of your station.

Beginners should use the 'search and pounce' method for their first several contacts. Then later on, when you have worked all the stations calling, put out CQ calls yourself.

Calling allows stations that are tuning across the band to find you and give you a number. This can significantly boost the number of contacts obtained. The reason for this is that during a contest there are all types on the band, from the die-hard contesters to the station who says they're not really in the contest, but are happy to give out a few numbers. Many of these less serious participants won't put out calls themselves, but will respond to stations calling CQ, especially if they want your call sign.

I mentioned before that operating tactics

are shaped by station capabilities. This is because people often prefer to answer CQ calls from stronger stations. A weak station on SSB with two strong stations either side may not be noticed by people tuning past. Also, strong stations can 'hold' a frequency, and ward off those who may be tempted to stray too close to it, but weaker stations may not be able to do this when the band is crowded.

If you're a weaker station it's best to use the 'search and pounce' technique most of the time, especially during the bigger DX contests when the bands are busy. Carefully scan the band for stations that are calling but haven't been worked before. Even if a calling station is weak, give them a call anyway - they may be using low power or have an antenna worse than yours. When calling, just give your own call sign - the other station already knows theirs!

Notwithstanding the above paragraph, weaker stations should not give up calling CQ altogether. If conditions seem reasonable but there are few stations around (common during many smaller local contests), you will work no one if you just listen. Put out calls yourself - if your signal is readable, people tuning across will answer. As mentioned before, calling CQ attracts many of the types tuning across the band who you'll never work if you only answer other people's calls.

Contest contacts are much shorter than other amateur radio contacts. All you need to exchange with the other station is a five or six digit number, consisting of a signal report followed by a serial number starting at 001. This serial number increases by one for every contact you make, thus you might send 57003 to the third station you work in a contest. Repeat this if your signal is likely to be weak at the other end. Figure 2 shows an example of a typical contest contact.

The pace of operating varies between contests. When it's fast and frantic just give the signal report and number. When it's

slow, some people will tell you their name and location as well. Conciseness is particularly important when signals are weak or if using CW - 5wpm is excruciatingly slow for CW operators, and you'll win the thanks of many if you just send the bare minimum of information the contest rules require.

While operating, fill in a log sheet similar to that in Figure One. Though it was designed for the RD Contest, it should be suitable for most Australian contests. Try to keep it legible - the Contest Manager may need it when he is checking logs.

After the contest

To formally enter a contest, send your log plus a front summary sheet to the address given in the contest rules. The summary sheet usually shows your name, call sign, section entered, score and a signed declaration that you operated ethically. The exact requirements for logs and summary sheets vary slightly between contests - see the contest rules for the requirements of that particular contest.

You will not normally receive notification that your log has been received. Results are generally published 3 to 6 months after a contest has been held, depending on the contest. Certificates are posted to winners after the contest results have been collated.

Conclusion

Contesting can be a highly absorbing facet of amateur radio. May your call sign feature in the results of various contests in the coming months. The best place to start is the Remembrance Day Contest in just a few days time on the weekend of the 14th and 15th August. The rules are printed in this month's Amateur Radio. If you have access to the Internet, further information about contesting appears on the Australian Contesting website at <http://www.uq.edu.au/radiosport/> and on the WIA Federal web page at <http://www.wia.org.au>

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Figure 2. An example of a contest exchange.

The following is a typical example of a phone contest exchange between VK3AA and VK6AA.

(VK3AA) **CQ CQ CQ RD CONTEST, THIS IS VK3AA**
(ie VK6AA seeking a contest contact)

(VK6AA) **VK6AA**

(VK6AA responds quickly but clearly)

(VK3AA) **VK6AA, THIS IS VK3AA. MY NUMBER TO YOU IS 57011**

(VK6AA's signal is 5/7, VK6AA is VK3AA's eleventh contact in the contest.)

(VK6AA) **THANK YOU FOR THE 57011. MY NUMBER TO YOU IS 58001**

(VK3AA's signal is 5/8, VK3AA is VK6AA's first contact in the contest.)

(VK3AA) **58001 RECEIVED, 73 AND GOOD LUCK IN THE CONTEST.**

(Contest contact ended successfully and both stations enter the contact in their logs. VK3AA continues calling CQ, while VK6AA looks for other stations calling CQ)

On CW, the procedure is similar, except that there is a heavy use of abbreviations to save time. Very often, nines are sent as 'N' and zeroes as 'T'. Thus, the first station you work might receive a '5NTT1' number from you, which is the equivalent of a 59001 report on phone.

IONOSPHERIC UPDATE

Solar activity

It was noted, last quarter, that the current solar cycle trends indicates that it will not be as good as the previous two cycles. A graph, overlaying the last three solar cycles, is included this time to make the comparison more stark.

Note the difference in the smoothed sunspot numbers between the current cycle (23) and the two previous cycles (21 and 22). While extrapolating data is difficult, you would expect that the current cycle not to be as good as the previous two. But how conditions can change.

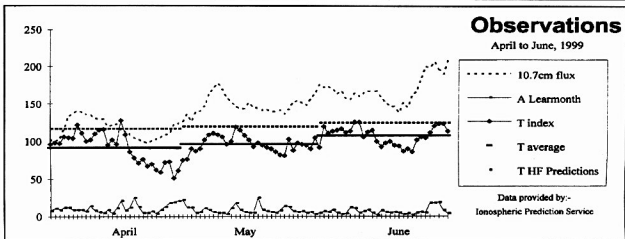
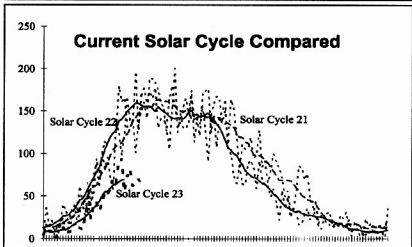
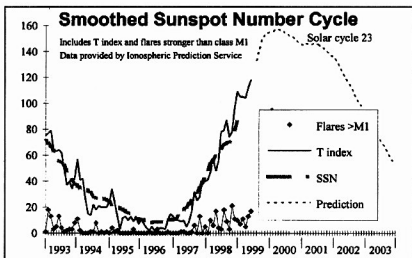
The rise in monthly sunspot number during the quarter has run counter to the trend just described. It was 64 in April, 106 in May and 137 in June.

The Ionospheric Prediction Service described the June number as *not only the highest so far this cycle (by a very long way) but also the highest for more than seven years*. They go on to say that *the smoothed sunspot number has been rising much more slowly than expected [see middle graph] but will now move up much more quickly toward the predicted peak smoothed number of 160. The peak is expected around April 2000[see top graph]*.

Geomagnetic activity

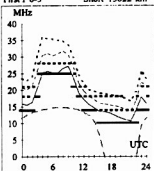
One outstanding matter from last quarter's *Ionosphere Update*: the increase in geomagnetic activity in the last days of March to minor storm level was due to a coronal hole.

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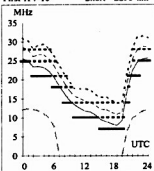
Adelaide-Amman 292

First F 0-5 Short 13022 km



Brisbane-Auckland 123

First F 0-5 Short 2290 km



August

1999

T index: 126

Legend

UD

F-MUF

E-MUF

OWF

ALF

100% 90%

90% 100%

Time scale

These graphs show the predicted diurnal variation of key frequencies for the nominated circuits.

These frequencies as identified in the legend are:-

- Upper Decile (F-layer)
- F-layer Maximum Useable Frequency
- E-layer Maximum Useable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency (D region)

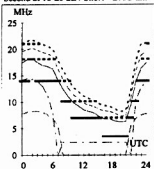
Shown hourly are the highest frequency amateur bands in ranges between these key frequencies; when useable. The path, propagation mode and Australian terminal bearing are also given for each circuit.

These predictions were made with the Ionospheric Prediction Service program: ASAPS version 4.

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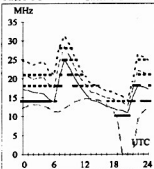
Adelaide-Invercargill 126

Second 2F16-20 2E4 Short 2796 km



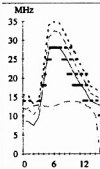
Brisbane-Dakar 217

First F 0-5 Short 18279 km



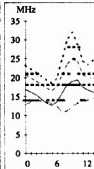
Canberra-Lusaka 239

Second 4F3-4 4E0 Short 11620 km



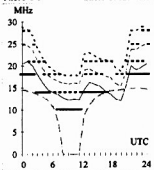
Darwin-London 145

First F 0-5 Long 26171 km



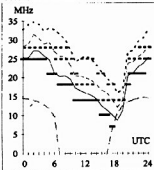
Adelaide-New York 67

First F 0-5 Short 17029 km



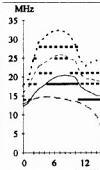
Brisbane-Honolulu 49

Second 3F5-11 3E0 Short 7569 km



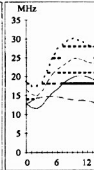
Canberra-Moscow 317

First F 0-5 Short 14481 km



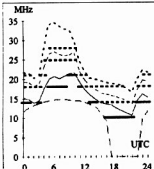
Darwin-London 325

First F 0-5 Short 13853 km



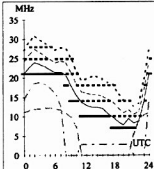
Adelaide-Rome 296

First F 0-5 Short 15337 km



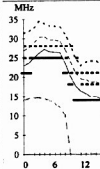
Brisbane-Singapore 293

Second 3F9-15 3E0 Short 6147 km



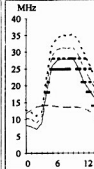
Canberra-Tokyo 352

Second 3F4-9 3E0 Short 7948 km



Darwin-Pretoria 242

Second 4F4-6 4E0 Short 10639 km



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- **Information about Motorola Integrated Circuit MC4044** - full data if possible. Costs reimbursed. David VK2IX QTHR (02) 47516124
- **Atlas 215 or 210** dead or alive. Jon VK2WF (02) 67751080.
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- **Digital Display Modification Kit** for Yaesu FT101Z. Noel VK2BCA QTHR (02) 4977 3449.
- **Old telephones, wood or bakelite** phones in any condition or parts ie earpieces, mouthpieces, handsets etc, or literature relating to early communications. Kevin VK2BKG QTHR
- **Information on JVC colour video monitor** type TM-22g. photo-copies of handbook or circuits only. John Toland VK2XXKX.02-6621-2933,e-mail:jtoland@nor.com.au 101 College Street Lismore 2480

WANTED QLD

- **6 metre all mode transceiver** (IC560 or similar). Keying head for paper tape using Wheatstone code. Make-model-condition-price. Gwen VK4CB QTHR (07)32027137.

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- **Assistance in programming** a Philips PRP-15 hand-held transceiver. Any information on programming cable etc, or access to a facility, would be appreciated. Peter VK6ZEG 08 9291 8015 e-mail:budgie@cantech.net.au
- **Power Supply 13.8volt DC** @ 20 Amp from mains 240v AC. Contact Don VK6DP 08 9294 2388.
- **For restoration of Kingsley AR7** receiver. Power Supply and Speaker or just the speaker panel would do. Also any coil boxes and an original manual. Contact Wayne - VK6FT on 08 9390 8241 e-mail:vk6ft@inf.net.au
- **420MHz UHF Pulse Amplifier** unit as sold by the VHF Group a few years ago. Either the high power or low power version would be suitable. Complete units would be preferred but would also take just the cavity and conduction cooled tube module. Call Alek VK6APK 08 9246 3490 e-mail:vk6apk@eon.net.au

FOR SALE NSW

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- **Swan 500CW with power and handbook.** \$400 or swap for Atlas. Jon VK2WF (02) 6775 1080.
- **Tokyo High Power 144MHz Linear Amplifier.** Model HL-180v. Brand new. Still in box. Never used. \$850. John VK2AYC (02) 95832056
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made and unmade. 1 GHz Freq Counter QRP Transmitter etc. The lot \$100. Various books. Mainly older versions of service and electronics - offers. Contact David VK2IX (02)47516124.

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• **Antenna 15m 3 element monoband Yagi.** Excellent condition \$125. John VK2DX (02) 4751 9795

• **Motorola UHF CB synthx base/repeater station.** channels 3133.typeasc700/800. rack mounted unit,12 volt operation,c/w microphone control unit and handbook. no antennas,no serial numbers,\$1000 ono.WICEN northern rivers region John Toland.VK2XXKX.02-6621-2933,e-mail:jtoland@nor.com.au 101 College Street Lismore 2480

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• **Icom IC 706 Mk1, all mode transceiver,** HF thru to 2 metres, good condition with original packaging and accessories. Price \$1275 Contact Bruce VK6CX phone 08 9310 4740 e-mail: williams@omen.net.au

• **Two Pye "lily" microphones,** as used on 1960's base stations. One green, ex Ranger series (I think) and one blue ex F60 series. Any interest to Peter VK6ZEG 08 9291 8015 e-mail: budgie@cantech.net.au

• **KENWOOD TS450SAT H.F. Transceiver,** all mode all bands. \$1000 Call Tim VK6EI 08 9337 5759 e-mail: timj@omen.net.au

• **Yaesu FT101 H.F. transceiver** plus FV101 External VFO. Complete with operator & service manuals for both units. \$120 ono. Call Rex VK6SN 08 9535 7992.

FOR SALE BY TENDER

• **Yaesu FTDX400,** may be operational, no guarantees at all. Unit weighs 40lbs. Freight to be paid by buyer. Mail tender to WIA PO Box 2175 Caulfield Junction Vic 3161. Mark back of envelope "Tender for Transceiver". Tenders close 31st August 1999.

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Agencies at: Assoc TV Service, Hobart: Truscotts Electronic World, Melbourne and Mildura: Alpha Tango Products, Perth: Haven Electronics, Nowra.

• **WEATHER FAX programs** for IBM XT/ATs *** "RADFAX" \$35.00, is a high resolution short-wave weather fax, Morse and RTTY receiving program. Suitable for CGA, EGA, VGA and Hercules cards (state which). Needs SSB HF radio and RADFAX decoder. *** "SATFAX" \$45.00, is a NOAA, Meteor and GMS weather satellite picture receiving program. Needs EGA or VGA & WEATHER FAX PC card, + 137 MHz Receiver. *** "MAXISAT" \$75.00 is similar to SATFAX but needs 2 MB of expanded memory (EMS 3.6 or 4.0) and 1024 x 768 SVGA card. All programs are on 5.25" or 3.5" disks (state which) plus documentation, add \$3.00 postage. ONLY from M. Delahunty, 42 Villiers St, New Farm QLD 4005. Ph 07 358 2785.



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WIA Division Directory

The WIA consists of seven autonomous State Divisions. Each member of the WIA is a member of a Division, usually in their residential State or Territory, and each Division looks after amateur radio affairs within its area.

Division	Address Officers	News Broadcasts	Notes: All times are local. All frequencies MHz.	Fees
VK1 ACT Division GPO Box 600 Canberra ACT 2601	President: Gilbert Hughes Secretary: John Woolner Treasurer: Les Davey	VK1GH VK1ET VK1LD	3,590, 146,950, 438,375, 438,325, 438,225 & 438,025 FM each Sunday from 8.00pm AEST. News text on packet BCAST @ VK1BBS. http://www.vk1.wia.ampr.org & aus.radio.amateur.misc.newsgroup . Send items by packet as personal message BCAST @ VK1BBS or e-mail to broadcast@vk1.wia.ampr.org.	(F) \$72.00 (G) \$58.00 (X) \$44.00
VK2NSW Division 109 Wigram St Parramatta NSW (PO Box 1066 Parramatta 2124) Phone 02 9689 2417 Freecall 1800 817 644 Fax 02 9633 1525	President: Michael Corbin Secretary: Eric Fossey Treasurer: Eric Van De Weyer (Office hours Mon-Fri 11.00-14.00) Web: http://ozemail.com.au/~vk2w/ e-mail: vk2w@ozemail.com.au Packet BBS: VK2WI on 144.850 MHz	VK2YC VK2EFY VK2KUR	From VK2WI 1.845, 3.595, 7.146*, 10.125, 14.170, 24.950, 28.320, 29.120, 52.120, 52.525, 144.150, 147.000, 438.525, 1273.500 (* morning only) with relays to some of 18.120, 21.170, 581.750 ATV sound. Many country regions relay on 2 m or 70 cm repeaters. Sunday 1000 and 1930. Highlights included in VK2AWX Newcastle news, Monday 1930 on 3.583 plus 10 m, 2 m, 70 cm, 23 cm. The broadcast text is available on the Internet newsgroup aus.radio.amateur.misc , and on packet radio.	(F) \$69.00 (G) \$56.00 (X) \$41.00
VK3 Victorian Division 40G Victory Boulevard Ashburton VIC 3147 Phone 03 9885 9261 Fax 03 9885 9298	President: Jim Linton Secretary: Barry Wilton Treasurer: Rob Hailey (Office hours Tue & Thur 0830-1530) e-mail: vk3w@rnt.com.au Web: http://www.tbsa.com.au/~wawic/	VK3PC VK3XV VK3NC	VK3BWI broadcasts on the 1st Sunday of the month, starts 10.30 am. Primary frequencies, 3.615 LSB, 7.085 LSB, and FM(R)s VK3RML 146.700, VK3RMM 147.250, VK3RWG 147.225, and 70 cm FM(R)s VK3ROU 438.225, and VK3RMU 438.075. Major news under call VK3WI on Victorian packet BBS and WIA VIC Web Site.	(F) \$75.00 (G) \$61.00 (X) \$47.00
VK4 Queensland Division GPO Box 638 Brisbane QLD 4001 Phone 07 3221 9377	President: Colin Gladstone Secretary: Peter Harding Treasurer: Alistair Elnick e-mail: secretary@wiaq.powerup.com.au Web: http://www.wiaq.powerup.com.au	VK4ACG VK4JPH VK4FTL	1.825 MHz SSB, 3.605 MHz SSB, 7.118 MHz SSB, 14.342 MHz SSB, 21.175 MHz, 28.400 MHz SSB, 29.220 MHz FM, 53.725 MHz FM, 147.000 MHz FM, 438.500 MHz (Brisbane only), and regional VHF/UHF repeaters at 0900 hrs EAST Sunday. Repeated on 3.605 MHz SSB & 147.000 MHz FM at 1930 hrs EAST Monday. Broadcast news in text form on packet under WIAQ @ VKNET.	(F) \$74.00 (G) \$60.00 (X) \$46.00
VK5 South Australian Division 34 West Thebarton Rd Thebarton SA 5031 (GPO Box 1234 Adelaide SA 5001) Phone 08 8352 3428 Fax 08 8264 0463	President: Ian Hunt Secretary: Merv Millar Treasurer: Joe Burford Web: http://www.vk5wia.ampr.org/	VK5QX VK5MX VK5UJ	1827 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 MHz Adelaide, 146.700 FM Mid North, 146.800 FM Mildura, 146.825 FM Barossa Valley, 146.900 FM South East, 146.925 FM Central North, 147.825 FM Gawler, 438.425 FM Barossa Valley, 438.475 FM Adelaide North, ATV Ch 35 579.250 Adelaide. (NT) 3.555 USB, 7.065 USB, 10.125 USB, 146.700 FM, 0900 hrs Sunday, 3.585 MHz and 146.675 MHz FM Adelaide, 1930 hrs Monday.	(F) \$75.00 (G) \$61.00 (X) \$47.00
VK6 West Australian Division PO Box 10 West Perth WA 6872 Phone 08 9351 8873	President: Cliff Bastin Secretary: Christine Bastin Treasurer: Bruce Hedland-Thomas Web: http://www.faroc.com.au/~vk6wia/ e-mail: vk6wia@faroc.com.au	VK6LZ VK6ZLZ VK6OO	146.700 FM(R), 438.525 FM(R), 29.120 FM at 0930 and 1900 hrs Sundays from Perth, relayed (morning only) on 1.865, 3.564, 3.582 (Bussetton), 7.075, 14.116 (North), 14.175 (East), 21.185, 50.150; (morning and evening) 146.900(R) Mt William (Bunbury), 147.000(R) Katanning, 147.200(R) Cataby, 147.250(R) Mt Saddleback (Boddington), and 147.350(R) Bussetton; (evening only) 1.865, 3.564 MHz.	(F) \$62.00 (G) \$50.00 (X) \$34.00
VK7 Tasmanian Division 24 Targett Street Scamander TAS 7250 Phone 03 6372 5305	President: Ron Churcher Secretary: Paul Godden Treasurer: John Klop Web: http://www.wia.tasnet.net e-mail: vk7kpg@tasnet.net	VK7RN VK7KPG VK7KCC	146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.725 (VK7RNE), 146.825 (VK7RMD), 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart), repeated Tues 3.590 at 1930 hrs.	(F) \$74.00 (G) \$60.00 (X) \$46.00
VK8 Northern Territory (part of the VK5 Division and relays broadcasts from VK5 as shown, received on 14 or 28 MHz).				

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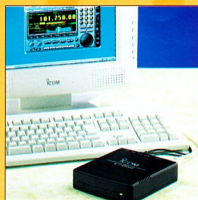
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T81A A remarkably compact quad bander. Superb clarity on the 6m, 2m, 70cms and 23cm bands. It's water resistant, with tone squelch and pocket beep functions standard, plus you can change volume and bands even quicker with the 'joy-stick' style multi-function switch.



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